

# CALIFORNIA AND WESTERN MEDICINE

VOLUME XXVI

FEBRUARY, 1927

No. 2

## THE OUTLOOK FOR THE DIABETIC

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THE EDITOR: "The Outlook for the Diabetic," which begins below and will be completed in the March issue, is an address delivered by Dr. Elliott P. Joslin of Boston before the San Diego County Medical Society at the Scripps Metabolic Clinic, La Jolla, California, on November 18, 1926. Over two hundred physicians of southern California gathered to hear this address by an acknowledged authority on the subject.

**THE Doctors' Diabetic Trust**—The outlook for the diabetic depends upon the education of the public, the patient, and the medical profession. Diabetes is not like smallpox, diphtheria, or typhoid fever, which anybody can avoid if he so desires; it is not like malaria which a patient can cure with a few quinine pills, nor does it resemble a bone out of its socket which a deft surgeon can replace with a turn of the wrist. Diabetes is not yet so simple and never can be. Diabetes is a disease which is interwoven with the habits and heredity of the individual, and to prevent or combat it requires that the entire adult population of the country be lifted up to a higher level of medical knowledge. Fortunately to further this task the diabetic patients themselves are our agents and allies. The duty of the physician is to direct the program, but to my mind that is but a fraction of his task. I look upon the million diabetics in this country as a trust placed in the doctors' hands for conservation and development. The lives of the diabetics must be preserved, but they must yield dividends of health for all. These patients are under constant supervision. Here is the opportunity for health examinations on a vast scale. What other such select group of adult individuals exists which can demonstrate better the efficacy of preventive medicine, the success of prompt surgical intervention in acute and chronic surgical affections, including cancer, the effect of early diagnosis of tuberculosis and, in fact, all other medical ills which can be thwarted or cured. What a trust!

The public and the patients too will watch our administration of it with critical eyes.

**Education of the Public**—The public should learn two facts about diabetes—first, that it is overwhelmingly more common after the age of 40 years, and, second, overwhelmingly more frequent in the fat.

The onset in 58 per cent of my cases in my former series was after the fortieth year, but in the group of patients who came under my observation for the twelve months ending July 1, 1926, the percentage of cases above 40 years was still greater, namely, 66 per cent. The death records for diabetes in Massachusetts as compiled by Angeline Hamblen are even more striking, for they show that for the years 1921-25, 86 per cent of the diabetic deaths were in individuals past 50 years of age as contrasted with 54 per cent in the first five years of the century. Middle life is a menace to the fat. When metabolism has become less active, when exercise lags and fat accumulates, the danger of acquiring diabetes becomes acute.

TABLE 1

THE FREQUENCY OF ONSET OF DIABETES  
BY DECADES

The middle-aged obese furnish the material for diabetes. In 1921 the records of 1000<sup>1</sup> diabetics were examined and showed that the maximum weights of only 10 per cent were below the standard weight zone, while 15 per cent came in that zone, and 75 per cent were above it. If we limit our study to the 626 individuals in the table who were over 41 years of age there were but 5 per cent below standard weight, 10 per cent in that zone, and 85 per cent above it. Recently another compilation of 1000 cases has been made, but this time pains have been taken to exclude from the list all save true, proven, diabetics. Here the figures are even more conclusive, because they show that the maximum weights of only 2.5 per cent above the age of 41 were below the standard weight zone and over 86 per cent above it. Between the ages of 51 and 60 in this recent series there were 252 diabetics, and of this number there were but two individuals who were underweight. If the public does not wish diabetes it should learn to keep thin, or at least to avoid obesity.

TABLE 2

VARIATION FROM NORMAL, ETC.

Obesity is harmful quite apart from its predisposition to diabetes. In fact the duration of life of a group of my fat diabetics who in consequence lost

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1. Joslin: Jour. Amer. Med. Assn., 1921, 76, 79.

TABLE 1  
FREQUENCY OF ONSET OF DIABETES BY DECADES

Period	1	2	3	4	5	6	7	8	9
1898—1922 <sup>1</sup> .....	5.7	8.3	12.2	15.9	25.1	22.3	8.7	1.6	....
July 1925—July 1926 <sup>2</sup> .....	5.1	7.8	6.7	12.4	24.8	27.6	13.4	2.0	0.2

<sup>1</sup> Compiled to July 1, 1922, 2611 cases; of these 2278 are true diabetics.

<sup>2</sup> Compiled July 1, 1925—July 1, 1926, 1135 cases; all true diabetics; ages of three others unknown.

weight has been shown to be greater than the calculated life expectancy for similar individuals without diabetes. Diabetes may be bad, but obesity in late middle life is worse.

Etna, California, shows the proper spirit. The Associated Press with its characteristic discrimination last June gave out a dispatch the importance of which was so obvious that the *Boston Herald* printed it on its front page. "Hill Town Hires Only Slim Teachers, Light on Muleback. Etna, Cal., June 11, 1926. Weight, or rather the lack of it, is one of the qualifications for teaching in the Salmon River School of northern California. On several occasions it has been the governing factor in the choice of a teacher. Applicants must give the figure at which they tip the scales, and too much avoirdupoise automatically stamps the application unsatisfactory." Praise be to Etna for her progressiveness.

*The Education of the Diabetic*—Personal responsibility for the treatment of his diabetes came with the general introduction of the use of the Benedict test for sugar by the patient. Many a patient had assumed this responsibility before, but it was not the least of Allen's contributions to medicine when he made the custom universal. Hitherto the patient not only could be cheated by the quack, but could cheat the doctor and himself too, but this simple test, which a child can perform, abolished any doubtful ideas in the patient's mind about the harmlessness of breaking his diet. The Benedict test has done more than anything else to secure for the physician the co-operation of his patient. Insulin has worked in a similar manner, because it has made the patient again co-operate with his doctor. Is there any chronic disease in which personal responsibility and co-operation between the two are more needed or better secured?

It is cruel to treat a diabetic patient without instructing him or her in regard to diet, insulin, and the complications which may arise in the disease and in a proper attitude toward work and life. One should go further and give suggestions about entering the professions, banking, and business, all of which are open. It would be disadvantageous to be a commercial traveler. The diabetic should not be a railroad engineer. Best of all he should seek an occupation which engages his muscles as well as his mind.

The development of the character of a patient, particularly if he is a child, demands almost as much attention as advice about diet or insulin. The paths of the diabetic child years ago often led to relaxation in discipline, but today he should be treated

as any child. No longer is a diabetic, whether child or adult, to be considered as a different species. Neglect discipline and the results are disastrous to the peace of the family, and ultimately to the child's social contacts. A diabetic child should enjoy the memory of a deserved spanking when he grows up just as much as do the rest of us. Diabetic children are precocious. They are as superior mentally as Priscilla White has shown them to be superior in stature from the analysis of the heights of 100 of my diabetic children at onset of the disease. These 100 children exceeded the average of the Wood table by 2.7 inches.

*Education of the Physician*—The outlook for the diabetic in this generation as well as in the next depends upon the doctor of today. Diabetes demands him at his best. In its treatment he must combine knowledge acquired in the laboratory, clinical acumen, a statistical bent, and an eye to preventive medicine. Without the knowledge of laboratory technique he is lost in the differential diagnosis of coma. Without good clinical training he will miss a latent tuberculosis or a cancer. Without an interest in statistics it will be difficult for him to keep his records and derive cheer from the progress which his patients make. His future peace of mind depends on the assiduity with which he conducts a campaign for the prevention of complications in his diabetic patients and of diabetes years to come among their descendants and in his nondiabetic clientele as well.

The medical profession has made enormous strides in the treatment of diabetes. I will show that later, but I wish to suggest here certain lines in which further progress can be made. Those of us who are fortunate enough to have a multitude of assistants and technicians and beautiful laboratories at our command do not realize the difficulties and the doubts which the general practitioner encounters in the treatment of his diabetics. It is wonderful he does so well. But it is wrong for him to be denied or to go without simple quantitative tests for estimation of sugar in the urine and sugar in the blood, upon which his treatment must be based. He must keep in advance of the patient. If the patient knows the qualitative test for sugar, the doctor must know the quantitative test for sugar or how he can easily secure it. Fortunately today we have simple micro-methods for blood sugar which any high school girl under a doctor's direction can learn in a brief space of time, and then place at the disposal of the physician. All of us who work in hospitals co-operate in our laboratory work. Physicians outside of hospitals should co-operate as well. Every doctor

TABLE 2

VARIATION FROM NORMAL AT MAXIMUM WEIGHTS AT OR PRIOR TO ONSET, OF 1000 CASES OF DIABETES, CALCULATED FOR HEIGHT, AGE, AND SEX

Age, Years	Number of cases	Below standard weight, per cent			Normal Average Zone Percent +5-5	Above standard weight per cent								Percentage of each decade below normal zone
		30-21	20-11	10-6		6-10	11-20	21-30	31-40	41-50	51-60	61-70	71+	
1-10.....	43	1	10	8	16	4	4	..	..	..	..	..	..	44
11-20.....	84	4	12	8	33	9	7	7	1	2	..	1	..	29
21-30.....	112	1	6	4	21	16	25	11	9	12	2	1	4	10
31-40.....	172	1	1	6	11	10	28	39	25	22	18	4	7	5
41-50.....	244	..	3	4	30	13	37	48	51	24	14	10	10	3
51-60.....	252	..	2	..	30	19	44	65	45	24	9	7	7	1
61-70.....	79	3	2	..	8	8	17	19	10	8	4	..	..	6
71-80.....	14	..	..	1	2	..	1	4	3	2	1	..	..	7
1-80.....	1000	10	36	31	151	79	163	193	144	94	48	23	28	

should have a laboratory at his elbow from which he can be furnished at minimum cost, or at no cost at all, the results of tests which will help him in his practice. It is more important for a hospital to teach a doctor in its neighborhood or perform for him the new, yet essential, laboratory tests than it is to do these tests for nothing upon a charity patient. I believe that the next forward step in the treatment of diabetes in the home—and that is where the majority of diabetics will always be treated—lies in making it easy for the general practitioner to have all the information that we in the hospital feel we must possess. Our hospital laboratories must be thrown open to the entire medical profession.

Diabetics seldom die of diabetes today. When they come for a visit to a doctor the doctor should never make it a routine, should never be content with an examination of the urine and a blood sugar test and a word about diet and weight, but he should look upon that patient as a trust, and insure him not only against the complications of diabetes, but against other diseases as well. No doctor should be just a diabetic specialist. The family doctor is the best doctor for a diabetic, because he is the one who can treat the patient from every angle. I believe that diabetic patients should be treated in their homes by the family physician, oftentimes in co-operation with another physician who sees more diabetics. I feel that if I can co-operate with a doctor in the treatment of one case of diabetes the chances are that that doctor will treat successfully ten other cases without me. I know I often fail of attainment of my purpose, because it is so easy for patients to come back to the office, but the intention is there, and I try to live up to it.

Indeed a diabetic in the family should be looked upon as an asset, a help to the health of all its members. He is the teacher of diet and cleanliness, a

force for hygiene. His family should become immune to diabetes. I try to teach my diabetics to lessen the dangers of diabetic heredity in their families by banishing obesity, to lessen arteriosclerosis, to avoid infections, and to live above the plane of tuberculosis.

*Diabetics are Living, not Dying*—Today it is the problem of the living diabetic rather than the dying. More than half of the diabetic children I have treated since 1898 are alive. During the year ending July, 1926, of the 185 living diabetic children on my rolls there were but five who died. Among 1138 true diabetics, old and new, who came for treatment last year there were but sixty deaths. In the year 1916 the percentage of deaths was 10 per cent, but this year the deaths were 5.3 per cent. It is noteworthy that no patient seen by me in the twelve months died at below the age of 15 years, and there were but three who were under the age of 30 years. Therefore in your future practice plan for the living diabetic.

Remember, too, that these modern diabetics will get married and rear families. With a diabetic boy this is allowable, but for a diabetic girl who contracts diabetes under 15 I have set a ten-year limit for the duration of the disease before entering upon matrimony. These girls need never, therefore, be over 25 years of age before marriage, and that is not too long to wait. Incidentally I will put on record that the catamenia of two of my patients returned after an absence of six years and six and a half years, respectively. Wilder has recorded a successful outcome of pregnancy in two severe cases of diabetes. I have seen the same. Following delivery both mother and child must be watched closely for hypoglycemia.

*The Duration of Life of the Diabetic*—In the Naunyn epoch the average duration of life of 331 of my fatal cases of diabetes was 4.8 years. The

TABLE 3  
DURATION OF LIFE IN FATAL CASES OF DIABETES ARRANGED IN DECADES

Decades of onset, years	Before June, 1914		After June, 1914, to March 16, 1922		July 1, 1922— July 1, 1926	
	No. of cases	Duration years	No. of cases	Duration years	No. of cases	Duration years
0—9.....	25	1.2	47	2.7	16	2.7
10—19.....	39	2.9	69	3.3	48	2.9
20—39.....	80	3.9	162	5.3	114	6.9
40—59.....	137	6.9	216	8.1	344	8.4
60—89.....	50	4.5	103	6.1	134 <sup>1</sup>	5.4
0—89.....	331	4.8	597	6.0	656	7.0

1. One case duration unknown, making total deaths 657.

Allen epoch—and we recognize that F. M. Allen was given to the diabetics by California—raised this figure for 597 fatals to six years. Thus far in the Banting epoch there have been 652 fatal cases, and the duration of these averages seven years. The data are recorded in Table 3.

TABLE 3

The average increase in duration of life of the diabetic today over that of the Naunyn era is 2.2 years, or 45 per cent. But this does not represent the true change in longevity, because it is the old, not the young, diabetic who is dying. The proportionate number of deaths in the early decades has greatly decreased. In the Naunyn epoch the deaths of those with onset in the first decade constituted 7.5 per cent of the total number; in the present epoch they constitute only 2.5 per cent. In the Naunyn epoch the deaths of those with onset at over 40 years were 57 per cent, they are now 73 per cent. The average age of the sixty patients who died from among the 1138 patients I saw during the year ending July 1, 1926, was 59 years. This is ten years above the average age at death of the citizen of Massachusetts and a year above that of the expectation of life of the new-born child.

A better idea of the future duration of diabetics is shown by the living children. Among 395 cases there are 8 or 2.0 per cent, three dead and five living, who have suffered diabetes more than a decade and no doubt exists about the accuracy of the diagnosis of six of these cases. The statement, therefore, is justified that with children even with old methods there were between 1 and 2 per cent who lived more than ten years. It so happens that this is about half the percentage of adults who have lived over twenty years, namely, 142 cases in the first 4257 true diabetics (see Table 6) coming to me for treatment. But the increase in duration of life of the child is progressing far more rapidly than in the adult. Diabetes begins so late in life that it is clear the old conceptions of its relations will be reversed. Today the young diabetic will be the long-lived diabetic, and the old diabetic will have the shorter duration.

I have purposely dwelt long upon the increasing

duration of life of the diabetic because of the relation it bears to the outlook for the diabetics in general. They are playing a larger part in the life of the community than formerly. This is not because the number of individuals who develop the disease is growing, but simply because those who have it live longer. This is very well shown in a table compiled by Angeline Hamblen for the adjusted death rate for diabetes in Massachusetts and in the registration states.

TABLE 4  
ADJUSTED DEATH RATE FOR DIABETES IN  
MASSACHUSETTS AND IN THE  
REGISTRATION STATES

Year	Registration States	Massachusetts
1900.....	10.4	11.1
1910.....	14.9	18.0
1920.....	15.9	18.4

There was a sharp increase in diabetes between 1900 and 1910, namely, from 11.1 to 18 per 100,000, but by 1920 the incidence had hardly changed. On the other hand, the true number of living diabetics must be far greater today. Whether there were 500,000 or a 1,000,000 diabetics in the United States in 1914 I do not know, but if the former figure was correct there must be over 700,000 now, and if the latter figure was nearer right there would be 1,400,000 now. The diabetic problem is therefore a real one and demands increasing thought. It will require many readjustments in our methods of life.

*The Change in the Causes of Death in Diabetes*—The causes of death in diabetes must exert a strong influence upon our attitude toward the outlook for the diabetic. A glance at Table 5 will show the extraordinary metamorphosis which the disease has undergone in this respect. In the Naunyn epoch 66 per cent of my fatal cases died of coma, and 87 per cent of all the diabetics whom the disease destroyed during its first year died of coma, and all the children died of coma; as late as 1922, 51 per cent of all cases died of coma; between 1922 and July 1, 1925, 28 per cent. Contrast these figures with the 10 per cent mortality due to coma this



TABLE 5  
CAUSES OF DEATH

	1898— March 16, 1922		March 16, 1922— July 1, 1926		July 1, 1925— July 1, 1926	
	Cases	Percent	Cases	Percent	Cases	Percent
a. Coma Present .....	454	51	166	28	6	10
b. Coma Absent .....	433	49	431	72	54	90
1. Cardio-renal, vascular.....	155	17	183	31	22	37
2. Infections.....	141	16	128	21.5	15	25
3. Tuberculosis.....	51	6	30	5	2	3
4. Cancer.....	35	4	31	5	6	10
5. Inanition.....	21	2	3	5	0	0
6. Miscellaneous.....	30	3	44	7.0	9	15
7. Diabetes.....	...	..	12	2	...	..

last year. There were sixty diabetic deaths and among these 1138 cases coma picked just six victims. Picture to yourself these diabetic patients whom I chanced to see but one or more times, who later were wandering up and down the length and breadth of this land and in other countries and continents too, and yet the medical profession and the patients were so intelligent that only six individuals died from this cause. I consider these figures as high a tribute to the progressive ideas and open-mindedness for new methods of treatment by the medical profession as one can adduce. Insulin alone never brings a patient out of coma. Intelligence in its use must go hand in hand with it.

TABLE 5

The significance of this great change in the causes of death in diabetes is more fundamental than the mere recital of the figures implies. Not only is diabetes *per se* no longer as fatal as formerly, but hardly can be considered fatal at all. It is not the disease directly which kills the patient, but its complications. Diabetes has had bad companions and they have given her a bad reputation. But in another way the altered character of deaths is even more significant. Formerly when coma developed we doctors put the blame on the patient, but now the causes of death are of such a character that the patient will be placing the blame upon us.

Next to coma come cardiorenal and vascular diseases, the degenerative diseases of old age. Such causes of death might be anticipated because the average age of death of my patients last year was 59 years, and already your attention has been directed to Miss Hamblen's statistics, which show that 86 per cent of the deaths from diabetes in Massachusetts occurred after the age of 51. As coma has gradually decreased, so these diseases have gradually increased. Cardiorenal and vascular diseases seem almost hopeless to attack, but I am not so skeptical, now that insulin allows the increase of carbohydrate and the decrease of fat in the diet.

Infections caused fifteen deaths, 25 per cent, among the patients who died last year. This was the highest percentage of deaths from infections yet reached in any tabulation of my deaths. The major proportion of these were preventable, because due to local, not general, infections. These found entrance through the skin and resulted in abscesses, carbuncles, and more especially the infections associated with gangrene. Will not our patients expect us to teach them how they can escape such needless deaths?

Tuberculosis caused but two deaths, 3 per cent. Cancer was as fatal to my diabetics last year as coma, for there were six cases of each. It has increased as a cause from 4 per cent prior to 1922 to 10 per cent today, thus exhibiting plainly the trend of the diabetic to grow old.

Inanition disappeared as a cause of death, and the other causes were of most miscellaneous character and were such as might occur with any group of patients.

Diabetic patients frequently die in hospitals, and this is quite as it should be. One-sixth of all the diabetics who die in Boston die at the Deaconess Hospital. We are glad to receive the critical diabetic. The ordinary diabetic should be treated in the home. It is quite proper that the serious diabetic or the apparently hopeless diabetic should be sent to the hospital. There is a pleasure in fighting the disease in such patients and a great reward, because so many who have been thought utterly helpless recover. We have a rule at the Deaconess Hospital that diabetic coma and diabetic gangrene are just as much emergencies as a fulminating appendicitis or a ruptured duodenal ulcer, and when these patients arrive at the hospital treatment is carried out with the same earnestness and despatch as with these avowed emergencies. Last year, of the sixty deaths twenty-six occurred in the hospital, and in the last three years and a half the total deaths in the hospital from diabetes have reached sixty-five. Of

these twenty-eight were medical and thirty-seven surgical. Of the medical patients admitted 1.6 per cent died; of the surgical diabetics the mortality was 10 per cent, six times as great. Moral: The surgical diabetic demands six times the attention given to the medical diabetic and more, for he demands the attention of the physician as well as the surgeon. In passing I might add that the number of diabetics being operated upon is rapidly increasing.

**Autopsies Upon Diabetics**—Shields Warren is reporting autopsies upon eight of my diabetic children either by himself or various pathologists during the last twenty-five years and, in addition, Dr. John of Cleveland and Doctors Stansfield and Starrow of Worcester have contributed two other cases to the list. These are instructive. In no instance do they show the pancreas to be exhausted, much less the islands. Hyalin degeneration, common in the pancreas of the old diabetic, was absent and lymphocytic infiltration, rare in the pancreas of the old, was invariably present. Hydropic degeneration was disclosed in but a single case. The changes in the gland did not appear irreversible and for these to take place time appeared to be a large factor. I mention the paper chiefly because I believe the field for morphological studies upon the diabetic pancreas has been by no means exhausted and that we clinicians should secure for our pathologists more such opportunities for research. No report of a diabetic fatality today is of great significance without a statement of the postmortem examination.

How should our patients regard an autopsy? It should be looked upon simply as an operation. Statistics suggest that every other diabetic goes to the surgeon during the course of his disease. If every other diabetic must be operated upon before he dies I believe that every diabetic should be operated upon after he dies. An operation during life is attended with pain and is for the benefit of the individual. An operation after death is without pain, but for the good of humanity.

Such examinations should be performed within three hours after the death of the patient. A few thin sections of the pancreas one-fourth inch wide should be taken from the head, tail, and body of the gland and placed in a preserving fluid (Zenker's fluid is the best), but if unavailable a 10 per cent solution of formaldehyde could be substituted, or one could use 95 per cent alcohol.

(To be continued in the March issue)

**Rip Van Winkle**, the nickname given to the armored dinosaur which has recently been placed on exhibition in the London Museum of Natural History, was a vegetarian, according to the label attached by naturalists to its glass case, says the *New York Times*. Thus it has taken thirty million years to explode the myth that the animal was a murderous monster and terror to such men as Mr. Neanderthal and M. Cromagnon, the most famous of the prehistoric people. According to the naturalists a tiny disease-carrying flea, which occupies a case adjoining that of the dinosaur, was a far deadlier creature.—*M. J. and Record*.

**Those Busy Bees**—The Charity Organization Society, New York City, has records on 3300 social welfare agencies which have sought public support in the city or upstate. Of this number 1450 are active at the present time.—*Health News*, New York State Department of Health.

## A SURVEY OF PRENATAL CARE IN CALIFORNIA \*

By ADELAIDE BROWN, M. D.

Member California State Board of Health

**ACCUMULATING** facts from which any deductions can be drawn on the medical procedures of individual physicians is treading on delicate ground.

It is necessary to rely on questionnaires, and unless the woman answering a prenatal questionnaire is quite intelligent her answers may be misleading. Our first survey of 144 cases for prenatal care, babies under 6 months of age, was made in San Francisco in 1922. The answers were taken by two trained nurses, and the questions carefully explained—that is, as to pelvic measurements and blood pressure. In no case was the name of the doctor or hospital included.

In the second group studied, in July, 1925, 146 cases were surveyed. These mothers had babies under 6 months of age, thus in no way overlapping the first group. The answers were written down by an intelligent laywoman, who had for illustration a pelvimeter and a blood pressure apparatus. These were San Francisco cases, and the groups were both from the Children's Health Center of the American Association of University Women and the Emporium Baby Center of the San Francisco Board of Health. Both places attract an intelligent group of young mothers, the wives of clerks, street railway employees, postmen, mechanics, etc. They are a rather uniform group.

In the third group, numbering 129, surveyed in 1926, the questionnaire was answered by mothers with babies under 6 months, the births not under the same doctor, in most cases. The answers were written down by the nurse taking the record. They cover twelve counties, six in the northern and six in the southern part of the state, sixty-five mothers in one group and sixty-four in the other. We avoided towns of any considerable size, desiring to get the average of prenatal care throughout the state. The points brought out are tabulated as follows: In general these cases were confined by private physicians; out of 417 cases only three were delivered by midwives. For the purpose of comparison, we have charted the 1922 and 1925 cases from San Francisco as urban cases, and the 1925 cases from the state at large as rural cases.

CHART 1

Urban		Rural	
1922	1925		1925
34	7	Home deliveries	88
110	139	Hospital deliveries	44
144	146	Total	129
112	127	Private doctor	118
30	19	Staff doctor	10
1	0	Midwife	1
143	146	Total	129

\* Read before the San Francisco County Medical Society, August, 1926.

Urban		CHART 2		Rural	
1922	1925			1925	
90	99	First baby	59		
21	30	Second baby	25		
9	11	Third baby	21		
23	6	Later baby	14		
110	103	Normal delivery	101		
24	35	Instrumental delivery	26		
4	3	Breech	6		
5	5	Caesarean section	3		

These tabulations show several things clearly:

First. That in all three groups prospective mothers consult physicians early in pregnancy.

Urban		CHART 3		Rural	
1922	1925	When Engaged Doctor		1925	
27	49	1-2 months	45		
22	34	3 months	21		
22	25	4 months	12		
10	11	5 months	4		
15	11	6 months	11		
13	16	7 months	10		
8	0	Later	15		
		In labor	8		

Second. Complete physical examination is made in urban cases more frequently.

Urban		CHART 4		Rural	
1925		Complete Physical Examination		1925	
105		Yes	66		
41		No	63		

In San Francisco (1925) eighteen cases had no physical examination and no prenatal care. Twelve of them were primiparae.

Third. That in prenatal care the urine is quite uniformly examined, and frequently.

Urban		CHART 5		Rural	
1922	1925	Prenatal Examination Urinalysis		1925	
21	59	Every two weeks	31		
40	76	Every month	38		
8	0	Every two months	3		
6	6	Once	15		
12	4	Twice	11		
48	3	No prenatal examination	16		

Fourth. That pelvic measurements have been more generally made in the second group in San Francisco; U. C. 1925.

Urban		CHART 6		Rural	
1922	1925	Prenatal Examination		1925	
121	130	Urinalysis	74		
20	5	No urinalysis	33		
3	11	One urinalysis	13		
27	41	Weight recorded	29		
117	105	Weight not recorded	95		
67	90	Pelvis measured	55		
77	56	Pelvis not measured	70		

Fifth. That blood pressure and pulse rate receive increasing attention.

Urban		CHART 7		Rural	
1922	1925	Prenatal Examination		1925	
76	98	Blood pressure taken	62		
68	48	Blood pressure not taken	64		
		Pulse rate taken	69		
		Pulse rate not taken	56		

Sixth. That the importance of weight observation and control of an over-rapid increase has not received much attention. (See Chart 6.)

CHART 8		Urban	
		1922	
No external or internal examination after third month	3		
No external or internal examination after fourth month	7		
No external or internal examination after fifth month	16		
No external or internal examination after sixth month	15		
No external or internal examination after seventh month	26		
No external or internal examination after eighth month	31		
No external or internal examination after term	9		
External or internal examination in labor	16		
	1925		
No external examination	43		
No internal examination	47		

Seventh. A complete analysis of the matter of internal and external examination shows a great variety of custom and little sense of the value in the first two months of pregnancy of the internal examination, and the corresponding importance in the seventh and eighth months of a series of external examinations as a guide to the prognosis of labor, both in the presentation and position of the child and in its approximation to the maternal passage. Rectal examinations were not surveyed. In 1922 fifty-seven examinations out of a possible 144 in San Francisco were made in the seventh and eighth months. Thirty-five cases were examined prior to the seventh month, and thirty-six had no external or internal examination prior to labor. Two Caesareans were in this group.

Eighth. A careful study of the rural cases impresses one with the facts that operative deliveries were 1 to 5, or 20 per cent, whereas in San Francisco in 1922 they are 16.7 per cent, 1 to 6, and in 1925, 29.5 per cent, or 1 to 3. Does this increase bear any relation to the extensive hospitalization of maternity cases in San Francisco? (See Chart 2.)

The suggestion has been made that in San Francisco a five-year study of infant mortality could be made for the neonatal period, that is, from birth to 14 days of age, by reviewing the hospital records of the last three years, and including 1926 and 1927. An increasing number of our maternity cases are delivered in hospitals. The statistics of 1919 show 56 per cent, of 1922, 65 per cent, and since that date the large maternity service of the St. Francis Hospital has been developed.

The five causes for death of the new-born, as given by the United States Census Bureau, are toxemia, traumatism, syphilis, congenital defects and debility. How far does this 13 per cent increase in forceps deliveries influence the traumatic deaths of the infant? There is need for such analyses if we are to grasp and try to reduce the 47 per cent of the infant mortality of the first year of life, which occurs in the first month.

We may learn also from the general practitioner in the rural districts that he assumes a responsibility in teaching the mother the care of the baby,

CHART 9

Urban 1922	Instruction on Care of Baby	Rural 1925
48	Nurse	66
9	Doctor	72
0	Intern	1
87	No instruction	21
	Instruction from nurse and doctor both	39

and the nurse does the same. To bridge this gap in the San Francisco maternity care, an instructive visit after the baby and mother leave the hospital was offered to private physicians by an expert obstetrical nurse under one of the organizations assisted by the Community Chest. This service was requested by 250 physicians at several of our large maternity hospitals during the last two years. A similar service is still given by the San Francisco Hospital and to the ward patients at the University of California and Stanford hospitals, but this had to be cut out for the private physicians, as the budget of the Community Chest necessitated cuts in all organizations financed by them. After six months, it has been re-established as meeting a real need.

The lack of appreciation of the value of a complete physical examination as a preliminary to prenatal care shows up clearly in these statistics. (See Chart 4.) No more impressive words came from Dr. Emmett Holt in his last visit in San Francisco than these: "Our greatest fault as physicians is that we do not use all we know."

A pamphlet called "Standards of Prenatal Care" has been issued during the past year by the Children's Bureau, and distributed with a record blank for care during pregnancy. This pamphlet expresses the combined judgment of seven professors of obstetrics and associate professors in seven university medical schools. California is represented by Dr. Frank W. Lynch, Professor of Obstetrics and Gynecology, University of California Medical School; also, Dr. George Clark Mosher, chairman of Committee on Maternal Welfare, American Association of Obstetricians and Gynecologists, and Dr. Ralph W. Lobenstein, chairman of the Medical Advisory Board of the Maternity Center Association of the City of New York; and the medical directors of the Bureau of Child Hygiene of the New York State Board of Health and the Kentucky State Board of Health. The points not covered in our questionnaire, and given in this national set of standards, are the taking of the temperature of cases at each prenatal visit, and the blood for a Wassermann test, and including the transverse diameter of the outlet with the external pelvic measurements. This pamphlet and the chart for pregnancy records can be obtained from the Bureau of Child Hygiene of the State Board of Health, State Building, San Francisco.

The education of the public on the necessity of prenatal care has been vigorously carried on by the Children's Bureau of Washington under the Infancy and Maternity Welfare Division. This stimulation and interest in prenatal care and the importance of childbirth as a forerunner of health or invalidism shows in the early call on the physician and the co-operation in regular visits. The work of

CHART 10

Urban 1922	Urban 1925	Who Sent You to Health Center or Public Health Nurse?	Rural 1925
1	11	Doctor	14
119	110	Friends	11
4	6	Nurse	7
		Visit of nurse	19
17	—	Board of Health	
10		Reading in paper	
		Metropolitan Life Insurance Co.	9
		Self	18

public health nurses, subsidized by the Government grant to our state, stimulates and spreads the knowledge of the value of this early care by the doctor. The end result of education in health is to make a more intelligent and therefore more critical laity.

It may be of interest to you to know that the maternal mortality rate per thousand live births in 1920 in California was 7.1, and per thousand total births, including stillbirths, was 6.8. In 1924, was 5.2 per thousand live births, and 5.1 per thousand total births, including stillbirths. This means, as there were 86,900 births in 1924, a saving of 185 mothers. In addition we must always remember that approximately 35 per cent of the puerperal deaths are deaths from sepsis, and the next largest toll gatherer in toxemia.

In closing, I wish to acknowledge the statistical work on the 1925 questionnaires done by Mrs. Flora May Fearing of Stanford University, instructor to public health nurses in the Stanford Public Health Nursing Course, and the co-operation of the San Francisco Board of Health and the Children's Health Center of the Association of University Women in furnishing us the privilege of collecting data from their mothers, and to the nurses subsidized by the Infancy and Fraternity Welfare grant from the Children's Bureau and co-operating under the Bureau of Child Hygiene, California State Board of Health, August, 1925.

**Epidemic Meningitis**—Most of the laity and many physicians think that patients recovering from epidemic meningitis are liable to be seriously handicapped, especially in their mental development. For this reason Josephine B. Neal, Henry W. Jackson, and Emanuel Appelbaum, New York (*Journal A. M. A.*), have followed up as many of their patients who recovered as possible to learn what percentage of cases show after-effects, and the nature of them. The mortality for 627 cases was 29.8 per cent. The mortality was highest among patients under 1 year of age (46.5 per cent); among patients over 30 it was 30.8 per cent; from 1 to 2 years it was 29.2 per cent. The great majority of patients, 82 per cent, make a complete recovery. About 18 per cent show sequelae, and these are often of a serious nature. The most important and frequent of the sequelae is deafness (7.7 per cent). Defects of vision are of rarer occurrence (2.1 per cent); paralysis occurred in 3.2 per cent; mental disturbances in 2.3 per cent. Rarer but nevertheless important sequelae were also encountered. In two instances there were sphincteric disturbances—one rectal and one vesical. One patient developed a pachymeningitis nearly two years later. Another patient developed a complete transverse myelitis, which had its inception early in the convalescent period.

"The Passing of the Professor" by Otto Heller, and "Who is a Moron?" by Henry H. Goddard, published in the January issue of the *Scientific Monthly*, contain information of value to physicians.



## HISTOLOGY AND MORTALITY IN TUMORS OF THE PROSTATE, BLADDER, AND KIDNEY

By A. J. SCHOLL \*

The postoperative data in a series of cases of tumor of the prostate, bladder, and kidney was correlated with the histologic structure in an endeavor to establish an index of malignancy.

There are two types of prostatic carcinoma: the first type, which has a lower degree of malignancy than the second, corresponds closely to the normal or glandular structure of the prostate. The second type is made up of irregular masses of cells with no attempt at differentiation.

The common epithelial tumors of the bladder are also divided into two primary groups: the malignant papilloma and the solid carcinoma. The first group, which is made up of tumors retaining to a considerable extent the characteristics of the bladder mucosa and the benign papilloma, is of a much less degree of malignancy than the solid carcinoma group.

Tumors of the kidney are divided primarily into the papillary adenocarcinoma and the alveolar carcinoma groups. The papillary adenocarcinomas correspond to the so-called hypernephroma group and are of several different types with corresponding degrees of malignancy. The alveolar carcinoma group is a small one; the tumor, which is highly malignant, tends to reproduce the tubules of the adult kidney.

The difficulty or ease of surgical removal of tumors must be considered a most important factor in regard to prognosis regardless of the inherent malignancy of any tumor.

BRODERS<sup>1</sup> states that a neoplasm can only accomplish what its cells can accomplish; if its cells are active it is active. A neoplasm may be of papillary form and of a low degree of malignancy, or it may be papillary and of a high degree of malignancy. Broders studied a large series of malignant growths and devised a method of measuring the degree of malignancy in neoplasms. His method, or index of malignancy, depends on the fact that the more a neoplastic cell approximates in structure to a normal cell the lower is the degree of malignancy.

Martzloff<sup>2</sup> several years later in a study of epidermoid cancers of the cervix found that the cancer cells fell morphologically into three large cell divisions, transitional, fat spindle, and spinal cell groups. The spinal cell type are the least malignant, the transitional cell next in order of malignancy, and the fat spindle cell was most malignant. The adenocarcinomas, a group apart from the epidermoid tumors in regard to their relative malignancy, fell between the spinal cell and the transitional cell group. In this study Martzloff developed a grouping of cases according to the degree of malignancy which was of value in the determination of prognosis.

Broders' index of malignancy, dealing as it does with the various transition forms of a single type of tumor, the epithelioma, is almost mathematically accurate. The grading, or correlating of the histology with mortality in tumors occurring in organs of complex cellular structures, does not permit of

such accurate deductions as Broders obtained in his study of superficially located epitheliomas. In operations on internal organs in which the growth at times involves vital structure there are several factors and procedures which disturb the relationship between the histologic index and the outcome of surgical procedures. The most important of these is the immediate operative mortality. There is a low operative mortality connected with the removal of a superficial epithelioma even though the local glands are also resected. On the other hand, in the removal of a bladder or renal tumor the degree of malignancy may be low, but the tumor is at times large, bulky, hemorrhagic and exceedingly difficult to remove completely. This is also true in the surgical removal of a carcinomatous prostate, the smaller fibrous prostates being of a much higher degree of malignancy than the large, glandular type which so readily extend along the seminal vesicles and paravertebral glands.

The complete eradication of all possible foci of malignancy, which might serve as a source of recurrence, is also a factor which may vary the outcome after operation. In the majority of cases metastases or local extensions depend on, and vary directly with, the degree of malignancy.

With several minor limitations the correlation of the histologic structure with the postoperative data is of decided prognostic value, and was carried out with a series of malignant tumors of the prostate, bladder, and kidney.

The various types of tumors which must be grouped separately for each organ have been found to fall into several distinct groups; each group has a definite individual degree of malignancy the knowledge of which may be of aid in determining the need of further surgical procedures and possible outcome of surgical treatment.

*Carcinoma of the Prostate*—The prognosis in cases of carcinoma of the prostate surgically removed is not influenced by the type of operation nor, markedly, by the extent of the growth. There are as many deaths, and they occur as readily in the suprapubic operation as they do after the perineal removal. The type of growth removed is the greatest factor in determining the prognosis.

Pathologically there are two types of prostatic carcinoma which have a corresponding clinical picture, as well as a corresponding postoperative course. The first type, which is of a much lower degree of malignancy than the second, is made up, histologically, of cells and glands corresponding closely to the normal or glandular structures of the prostate. The cells are fairly regular in size and shape and retain the long, tufted end projecting into the glandular lumen which is one of the most significant features of prostatic epithelium. The nuclei are round, relatively larger than the nuclei found in normal or hypertrophied glands, and contain the distinct nucleoli which are so prominent in undifferentiated cells. Clinically these prostates are large, nodular, stone-hard, and produce marked symptoms of obstruction. The second type of cancer is usually made up of irregular masses of cells having no tendency to conform to the usual glandular type of

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Fig. 1—Type I prostatic cancer. Glandular type of malignancy resembling normal prostatic tissue. (X 100.)

Fig. 2—Type II prostatic cancer. Irregular wedges of tumor cells containing deeply staining nuclei. (X 50.)

Fig. 3—Malignant papilloma. (X 50.)

prostatic epithelium. The cells vary in size and arrangement. They comprise great masses, or extending wedges of tightly packed cells containing large, deeply staining nuclei. In other cases the cells are loosely arranged, separated and supported by small amounts of connective tissue. In some prostates of this type there is an excess of fibrous tissue and the cells may have disappeared completely or are pressed out into bizarre lines and streaks. At times these cells are recognized only on account of the deeply staining nuclear fragments which persist. When glandular formation does occur the glands are composed of flat cells, grouped together irregularly and containing very large nuclei. Clinically prostates of this second type are small, fibrous and firmly fixed; they are extremely malignant, metastasize readily and are often unrecognized, since paralysis may occur as a result of metastasis before the glands have reached sufficient size to produce urinary symptoms. Unquestionably there are some prostatic carcinomas that contain elements of both types, and it may later be determined that they both have a common mother cell or type.

The first type of carcinoma is occasionally found in association with hypertrophy; urinary obstruction, which occasionally occurs, results in prostatectomy while the carcinoma is still in an early stage. The second type is rarely discovered except in advanced cases. In a review of cases of prostatic carcinomas studied in association with Judd and Bumpus<sup>3</sup> at the Mayo Clinic, we found that 50 per cent of the first type were alive from one to six years after operation. Forty per cent of those that died lived over three years. Ninety per cent of cases having the second type of cancer were dead, none had lived more than three years after operation, and 50 per cent had died the first year after operation.

**Tumors of the Bladder**—In the removal of large tumors of the bladder the immediate mortality resulting from the surgical procedure is at times high. In those cases surviving the immediate effects of the operation the type of tumor or degree of malignancy is of decided importance in the determination of the prognosis. The location of the growth is also important; if it is in an accessible area it may be removed completely, otherwise a permanent cure is not possible.

The simplest grouping of the common malignant epithelial tumors of the bladder divides them into two groups, the malignant papillomata and the solid carcinomas; terms which suggest the gross and histologic structure of the two types of tumors. The malignant papilloma group is made up of tumors that retain their pedicle and are composed of clubbed fronds; grossly they usually have an irregular outline and at times attain a large size. Histologically many cells are found to retain the regularity of disposition occurring with benign papilloma; in other areas they are undergoing the various transitional stages of malignancy.

The solid tumors are of two types: the widespread papillary epithelioma, and the low, flat, infiltrating, carcinoma. The papillary epithelioma is a friable, often flabby or soft tumor with a tendency to split in cleavage planes; this tumor rapidly covers the surface of the bladder. Histologically, remnants of the supporting elements of altered papillae and the grouping of the cells indicate its relationship to the papilloma. The infiltrating type of solid carcinoma are usually firm and compact and tend to extend into the walls of the bladder. These tumors rarely contain remnants of papilloma. The cells of both types of solid tumors are usually very large and contain prominent nucleoli. They are crowded together without form and with only a small amount of intervening connective tissue; mitotic figures are common.

In a series of cases<sup>4</sup> in which the different types of malignancy were correlated with the postoperative data it was found that 36 per cent of patients with malignant papilloma were dead after a postoperative duration of life of almost one year. Fifty-three per cent were alive on an average of over two years after operation. In contrast to this, over 70 per cent of patients with the second or solid type of carcinoma were dead after an average duration of life of seven months. Only 28 per cent were alive for an average of three years after operation.

Squamous cell tumors of the bladder develop as a result of metaplastic changes in the bladder, usually resulting from the irritation of infection or calculi. These tumors grow rapidly, cause few local symptoms and metastasize extensively. They are the most malignant of the epithelial tumors of the blad-

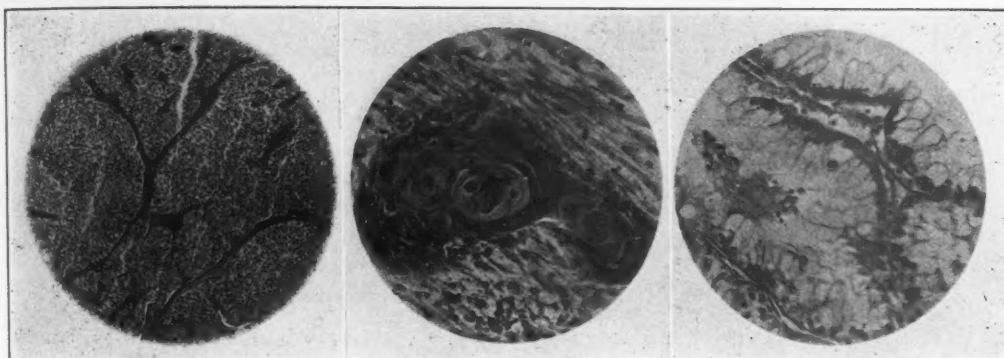


Fig. 4—Solid epithelioma of bladder. (X 50.)

Fig. 5—Squamous cell tumor of the bladder. (X 200.)

Fig. 6—Papillary adenocarcinoma of the kidney with clear cells. (X 200.)

der and practically always cause death shortly after the appearance of local symptoms.

Adenocarcinomas of the bladder are an individual group. They tend to locate in the dome of the bladder, readily penetrate the bladder wall and recur readily. They offer the patient about the same chance of a permanent cure as does the malignant papilloma.

**Tumors of the Kidney**—Malignant epithelial tumors of the kidney are divided into two main groups, first suggested by Ewing,<sup>5</sup> papillary adenocarcinoma and alveolar carcinoma. The papillary adenocarcinomas correspond to the so-called hypernephroma group; they are moderately malignant, grow to a large size, metastasize only in the later stage, and frequently become hemorrhagic or cystic. In a series of cases studied with Braasch and Foulds<sup>6</sup> we found an operative mortality in this group of cases of 8.5 per cent. Fifty-four per cent of the remainder were alive and well six years after operation.

The first main group of papillary adenocarcinomas are made up of three different types of tumors:

1. Papillary adenocarcinoma with clear cells.
2. Papillary adenocarcinoma with granular cells.
3. Malignant cystadenoma.

The tumors of each group have a clearly defined histologic structure and a corresponding clinical course. The carcinomas with the clear cells form large bulky tumors usually well demarcated from the uninvolved portion of the kidney. They are vascular and frequently cystic. Ten per cent of patients with this type of tumor died following operation. Fifty per cent of the patients traced were alive and well for an average of five years after operation.

The papillary adenocarcinomas with granular cells are more uncommon and of a higher degree of malignancy than the clear cell group. They form small, usually compact, homogeneous tumors with a marked tendency to infiltrate and involve neighboring structures. They grow more rapidly than the first group, consequently the thick encapsulation and hemorrhagic necrosis of clear cell tumors is not so marked. This group has the same operative mortality as Group 1, but only 31 per cent were found alive and well for an average of eight years after operation.

The third group, the malignant cystadenomas, are not common. They usually do not extend to the surrounding tissues and are slow growing, rarely attaining a large size. These tumors are generally easily removed surgically, and at times give evidence of slow growth and long existence, thick fibrous capsules and areas of hyalinization being usually found. No patient with this type of tumor died following operation; 72 per cent of the patients traced were alive and well seven years after operation.

The second main group, the alveolar adenocarcinomas, is a small one. These tumors are highly malignant, readily breaking through the renal capsule and invading surrounding structures. They have a tendency to reproduce the tubules of the adult kidney resembling the renal parenchyma. In some areas the cell structure forms definite alveoli, in others there is very little differentiation, merely a clumping or matting together of irregularly shaped and irregularly packed cells. This group had an operative mortality of 15 per cent and only 13 per cent of the remainder were alive and well for an average of ten years after operation.

The only clinically important tumor of the renal pelvis is the papillary carcinoma. The local growth is usually of about the same degree of malignancy as the grossly similar tumors occurring in the urinary bladder. The prognosis in these cases is greatly influenced by the ramifications of the growth, the numerous locations for secondary deposits, and the persistency of recurrence. The actual malignancy of the original tumor is usually not of a high degree, but on account of the difficulty of surgical removal this tumor offers the patient a very poor prognosis.

Squamous cell tumors of the kidney usually originate in the renal pelvis and rapidly spread to the parenchyma. They metastasize readily, recur promptly after nephrectomy, and are practically always fatal.

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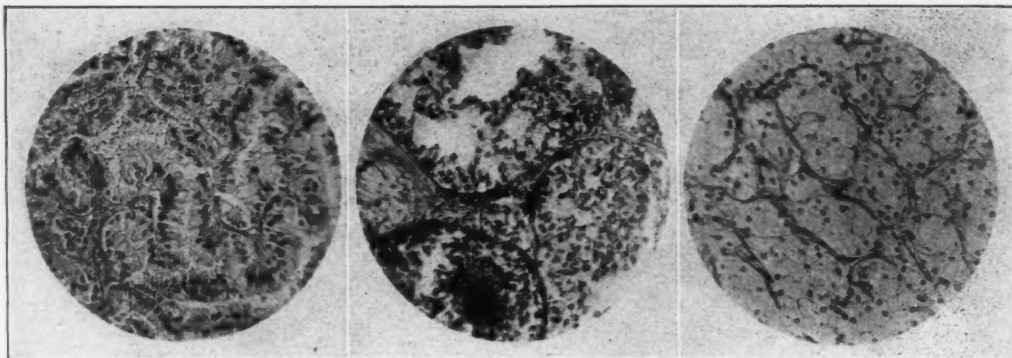


Fig. 7—Papillary adenocarcinoma with granular cells. (X 150.)

Fig. 8—Malignant cystadenoma of the kidney. (X 60.)

Fig. 9—Alveolar adenocarcinoma of the kidney. (X 100.)

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#### DISCUSSION

C. W. BONYNGE, M. D. (2007 Wilshire Boulevard, Los Angeles)—Any effort toward the differentiation of the comparative malignancy of neoplasms is of unquestionable value. The knowledge at hand on this subject has been materially enhanced by the data presented in this paper. However, at the present time, even with the most careful cell differentiation, I question the ability to give a prognosis with mathematical accuracy. We are too dependent upon the still unknown subject, the etiology of malignancy. After hearing Doctor Warthin speak on "The Incidence of Cancer" one cannot help but feel that possibly the individual resistance has much to do with the conduct of a neoplasm even after it has become established in the body.

We have a perfect right to say the more embryonic or atypical a cancer cell appears, the more malignant it is. But up to now we have no means of explaining how or why some individuals resist metastasis, while others with the same type of tumor succumb rapidly.

Doctor Scholl's description and classification of the malignancies presented are simple and very graphic, and form a valuable addition to our present texts.

THOMAS E. GIBSON, M. D. (742 Flood Building, San Francisco)—Doctor Scholl deserves commendation for presenting a subject which is not spectacular but is nevertheless new and extremely fundamental in its significance. A knowledge of applied pathology is a basic constituent of clinical judgment, and no degree of mere technical skill will excuse a surgeon's lack of clinical judgment.

Alexis Carrel has said that carcinomas belonging to the same histological type will grow at very different rates in people of identical age. Doctor Scholl, on the contrary, has shown very convincingly that within certain limits there is a very definite histologic index of prognosis for cancer. This is true not only for the various types of carcinoma occurring in a given organ, but, as Broders has shown for epithelioma of the lip, a single type of carcinoma can be graded with respect to prognosis.

My own experience bears out Scholl's statistics to the effect that scirrhus carcinoma is more malignant than adenocarcinoma of the prostate. As an example, I might mention two patients on whom I operated perineally about a year ago. Both were apparently fairly early cancers. One proved to be a scirrhus, the other an adenocarcinoma. Three months after operation the scirrhus cancer returned

with almost complete retention and evidence of rapid recurrence. A year after operation the adenocarcinoma patient was still free from urinary symptoms of any sort and never felt better in his life.

With respect to bladder tumors, I am more and more impressed with the futility of the term "benign papilloma." For practical purposes the term should be discarded, as should also the preliminary removal of tissue from the bladder with forceps or snare to determine whether a papilloma is benign or malignant by histological examination. Experience has shown that the pathologist's report of "benign papilloma" is worthless unless it is based on careful study of every cell in the tumor by serial section. This is impractical, and it makes no difference anyhow because the treatment is the same for both.

With respect to solid carcinomas of the bladder, Scholl has stressed the malignancy of the squamous cell type, which resembles the cornifying epitheliomata of cutaneous surfaces. This type is rather uncommon. In 1921 I was able in association with Frank Hinman to collect ninety cases of the condition, and they exemplified very strikingly the theory of anaplasia as an index of prognosis. They deviate markedly from the normal type of bladder epithelium, and are therefore of relatively high malignancy.

I was amazed at the statistics School reports for hypernephroma—54 per cent alive and well after six years. I have not seen a very large number, but those of whom I have knowledge are all dead.

It is perhaps fitting in connection with Scholl's very worthwhile paper to mention McCarty's rather revolutionary ideas on tissue diagnosis. He emphasizes the importance of studying the living cell. It seems possible, by taking tissue immediately after it is removed at operation, making frozen sections, staining momentarily with polychrome methylene blue, and studying the individual cells, to make earlier and more accurate diagnoses than by the old paraffin section method. We might go a step further and produce true intravital staining of cancer cells by intravenous injection of the patient before operation. This might yield fruitful information concerning cancer not alone of value in diagnosis. Trypan-blue is said to be harmless and to produce beautiful intravital staining, but leaves the subject discolored for some months.

A. M. MOODY, M. D. (909 Hyde Street, San Francisco)—Doctor Scholl has presented a very big subject clearly and concisely. In the discussion of a paper such as this there are many points I should like to discuss about the various types of bladder, prostate and kidney tumors which I have studied, but shall limit my remarks to those points on which our opinions differ somewhat.

The following facts about a tumor are of importance for the surgeon to obtain from the pathologist:

1. Is the growth malignant?
2. What are its cellular characteristics?
3. Does it contain evidences of slow or rapid growth?
4. Has the tumor been completely removed?



If the pathologist can accurately determine the above points he has accomplished much. The question of the probable duration of life as attempted by the microscopic examination of tumors has never appealed to me as anything more than a hazardous guess. There are so many clinical factors concerned in any case of malignancy that I feel certain prognosis cannot be accurately determined by the histological examination of tumors *per se*.

Mortality statistics are of great importance when properly controlled, but statistics in one clinic do not apply to all clinics. They are at best only a crude estimate of what we are all striving to accomplish, i. e., the prolongation of life.

Scholl's paper rightly brings out the point that tumors which are recognized early in development are the ones which offer the best chance for their complete removal. This, to me, is still the most important point when considering the treatment of malignancies.

A. A. KUTZMANN, M. D. (1052 West Sixth Street, Los Angeles)—Scholl has gathered together some interesting urological facts calculated to aid in prognosis. Clinicians have been in the past wont to consider the field of pathology as something apart from clinical medicine. It is of importance that the urological surgeon know and recognize histopathological features and not rely entirely on the pathologist. By such knowledge he will develop judgment in addition to just technical skill and so be able in most cases to foretell the course of events. The problem of prognosis is a great one and of practically as much importance as that of therapeutics. Scholl has shown with what probability the urologist can prognosticate within certain limits. It will, of course, never approach mathematical accuracy, but by striving to achieve such a goal, we will pass from the stage of empiricism to that of fact, that is, within certain relative limits, since medicine is not an exact science and the human organism with its assorted ailments may vary so.

In discussing the relation of histology to prognosis, Scholl is opening a rather new field. No doubt many surgeons of great experience have gathered together such facts in their minds, but very few if any have recorded them. The figures as stated in the cases of prostatic and bladder tumors approximate the usual experience and outcome in those patients. The figures quoted under malignant kidney tumors I fear are far too optimistic. Everywhere in the literature and from our experience we have been impressed with the great mortality. In conjunction with Frank Hinman a survey of the field was made several years ago, when an ultimate mortality of over 90 per cent was found.

In conclusion, I wish to commend Scholl on his able dissertation of so dry but yet important a subject. It would be wise that everyone study and familiarize himself with the fundamentals of this paper, since in dealing with malignancies of the genitourinary tract some of the most fatal malignant tumors are encountered.

A. ELMER BELT, M. D. (Pacific Mutual Building, Los Angeles)—Here we have the clinician pencil and pad in hand invading the pathological laboratory in an effort to calculate the future of his patient. The severest test of any science is the reduction of its facts to a mathematical equation. The trial before us is: microscopic physical appearance equals what, in length of years? Scholl's answer is a striking confirmation of Broders' law of anaplasia as an index of prognosis: great deviation from the normal cell structure in malignant growth equals short duration of life for the individual.

The paper is far too brief for the considerable importance of its theme. The figures given permit no opportunity of critical analysis. To be criticized properly it must be read together with its brief bibliography which is largely from the author's pen, where are given in greater detail statistics which here are only scanned. It is then seen that a vast storehouse of material has been drawn upon, the accumulations of a clinic where uniform and marvelous applied technical skill is the rule. Uniform and vast as it is, one hesitates to acclaim too readily from its data the establishment of a biological law.

Broders' effort has pointed the way. He presents a theme which may call every clinician into the pathological

laboratory, as Scholl has been called, asking not only "Is it cancer?" but "How long will my patient live?"

DOCTOR SCHOLL (closing)—The results following surgery for renal tumors are good, but they are not markedly different from those obtained at the present time in most big urologic centers. The majority of case reports of renal tumors, and especially of several recently published reviews, are of operations performed before urologic diagnosis had reached its present state of diagnosis. Practically all recent reports of results obtained in nephrectomy for tumor performed in European clinics are of cases done many years ago. Quite a contrast in accuracy of diagnosis is offered between the status of 1895, when A. O. J. Kelly reported a large series of renal tumors, 72 per cent of which came to autopsy undiagnosed, and that of our present period, when ureteral catheterization and the pyelogram almost invariably permits correct diagnoses of tumors even in early stages when the lesions are small and operable. Stevens, who reviewed 348 reported cases of renal tumor as recently as 1923, stated that 85 per cent of hypernephromas had the three classical diagnostic points, hematuria, pain, and palpable tumor; pain and tumor suggest well-advanced cancer. Kretschmer found that this triad of symptoms occurred in one-third of his own, comparatively recently, operated cases.

I appreciate the interest and frankness of the men who have discussed my paper, and thank them kindly.

## VOLVULUS OF ENTIRE SMALL INTESTINE WITH TORSION OF MESENTERY

### CASE REPORT

By THEODORE C. LAWSON \*

A white man of 40 years, machinist, entered the hospital unconscious, and died one and one-half hours later without regaining consciousness.

Five days prior to admission the patient complained of not feeling well, but ate a hearty dinner. A few hours later he vomited, which act was repeated at intervals during the evening and night, accompanied by a choking sensation, but with no pain. He returned to work the next morning, but the vomiting continued, and was of a yellow fluid nature, not foul. Two days after the onset he had two convulsions, each lasting about an hour. The day before admission he became delirious, and the vomitus, which had become more severe and persistent, began to have a fecal odor. The same day he was given a laxative, and one and one-half hours later he passed some pink-stained fluid.

P. H. Four years ago, following an attack of influenza, the patient began to have attacks of gas pains over the epigastric region which were always relieved by soda. He was frequently nauseated and vomited after meals, but he never complained of pain or tenderness of the abdomen.

P. E. On admission for his last illness the patient was in coma with twitching of extremities and facial muscles. The lungs were negative except for a few crepitant rales at both bases posteriorly. The heart rate was rapid, with heart sounds of poor quality, valvular in type. The abdomen showed slight distention below the umbilicus with slight rigidity of the recti muscles, but no masses were felt. Temperature, 100.6; pulse, 105; respiration, 28.

**Autopsy Findings**—In addition to other conditions in which we are not interested, the findings were as follows: Stomach dilated to twice its normal size, and contained

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undigested food with thin yellow material of fecal odor. The small intestine was involved in a massive volvulus with torsion of the mesentery, counterclockwise, for two complete turns, or 720 degrees. The gut involved included all that from one and one-half inches below the duodenal-jejunal juncture to within two inches of the ileocecal valve. The dorsal attachment of the mesentery to the small intestine was only one inch in length, just enough to contain the superior mesenteric vessels. The small intestine was dilated, brownish purple in color, with evidence of beginning gangrene. The mesenteric and colic veins were markedly dilated. The large intestine at the splenic flexure was found doubled up on itself and bound down with adhesions. The descending colon was collapsed and descended from the splenic flexure for about eight inches, when it became bound with adhesions, and curved upward and medially for five inches and then descended down just to the left of the vertebral column to the rectum.

In 1903 George T. Vaughan gathered from literature a total of sixty cases of volvulus of the small intestine, in twenty of which the volvulus was of the entire small intestine with torsion of the whole mesentery. To these he added the record of his patient who was operated on with complete recovery. Since then the following have been reported:

1914. Weible—personal case, operation, recovery. Summary of sixty-six cases of volvulus of the small intestine.

1917. Vaughan—personal case. No operation, death.

1917. Garrow—fatal case.

1920. Wise—personal case, operation, recovery.

1920. Sabawala—personal case, operation, recovery.

1920. Billington—fatal case.

1922. Heymann—fatal case.

1923. Tees—four cases of volvulus of small intestine. Two involved most of small intestine, both were operated on and died.

1924. Wheeler—personal case, operation, recovery.

The present case is the seventy-seventh to be reported. Out of this total there have been twenty-five recoveries, or 33.3 per cent, all of whom were operated on, showing excellent operative results and comparing very favorably with the very high percentage of fatalities found usually in other forms of intestinal obstruction. Several authors refer to having seen similar lesions, both in the operating room and at postmortem which were not otherwise reported, so the total number of cases should be much larger.

**Incidence**—The incidence of volvulus is indicated by the reports of the Massachusetts General Hospital where, during twenty years, there were tabulated 239 intestinal obstructions, 25 of volvulus. Ten were volvulus of the small intestine which in one included the whole small intestine with torsion of the entire mesentery. In the London Hospital during thirteen years there were 669 diagnoses of intestinal obstruction of which 27, or 4 per cent, were due to volvulus, and 7 involved the small intestine. Leichtenstern states that of 1500 intestinal obstructions, 33 (2 per cent +) had volvulus.

**Age**—Volvulus is definitely associated with adult life, the average age being 45 years. Tissier and Mercier reported a congenital case and several patients have been over 70 years.

**Sex**—One author reported 51 instances in men and 13 in women; another 32 in men and 27 in women.

**Location**—More than one-half of the cases of volvulus, according to Vaughan, are at the sigmoid flexure, fewer at the cecum, and fewest in the small intestine, where only a small proportion involve the entire small intestine. By far the greater number of patients with volvulus also have obstruction, in part at least, of the large intestine, principally due to the nonrotation of the mesentery and combined large and small intestine during embryonic life. Of the cases reported by Gibson 73 involved the colon, 58 the sigmoid, 15 other parts of the colon and small intestine.

**Degree of Torsion**—The degree of torsion in most instances has been 180 degrees. In two patients it was 90 degrees; in three including our present one it was 720 degrees. Garrow's patient had a twist three and one-half times or one of 1260 degrees. In most of the patients the direction of the twist was clockwise. Vaughan found it clockwise in twenty-four, and counterclockwise in two.

**Etiology**—The great majority of authors state that the commonest predisposing cause of volvulus is the presence of structural changes, mostly bands or adhesions, either of congenital origin or those formed by a previous peritonitis. Van Hook and Kanavel in Keen's Surgery, Allbutt and Rolleston and others of high authority state that volvulus has been reported due to old scar formation and chronic mesenteritis (Philipowicz and Küttner), former operations with bands and adhesions (Whiting, Riedel, and Hübner), mesenteric cysts, habitual constipation and chronic intestinal stasis with traction on the mesentery (Bosquette and Delore). Most patients with volvulus have been known to have long mesenteries, i. e., with a greater distance between the posterior abdominal wall to the gut, permitting a greater range of motion of the mesentery and intestine during peristalsis. Congenital maldevelopment of the mesenteric pedicle in the shortening of its vertical attachment to the posterior abdominal wall was frequently present. In our patient the base of the mesentery was about one inch long, just enough to permit the passage of the superior mesenteric vessels. Also a final predisposing cause must be stated as a condition due to the nonrotation of the common mesentery and large and small intestine during embryological development, a rotation which usually takes place during the fourth fetal month. At this stage of development both the large and small intestine have a common mesentery and are both involved in this rotation, and as the colon is in the most dependent portion of the alimentary canal, it can be readily seen how the large intestine is most commonly involved in volvulus.

A new factor as to exciting cause of volvulus has been brought out by Tees, who shows that it is often due to the disordered peristaltic action of the intestine. A high percentage of volvulus in patients with intestinal obstruction is reported in the Slavs and Scandinavians. In 153 cases of obstruction collected by Faltin (Helsingfors) 78 or 51 per cent were due to volvulus, of which 22 per cent occurred

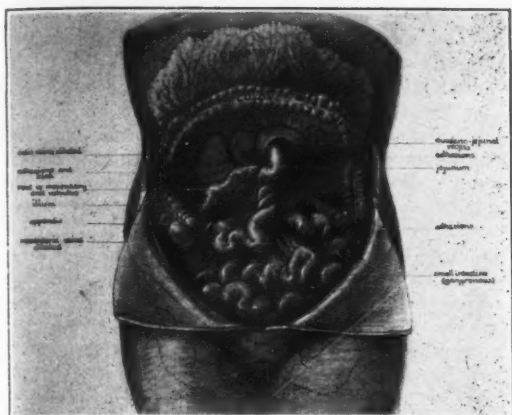


Fig. 1—Volvulus of the whole small intestine with torsion of the entire mesentery showing adhesions with anomaly of the large intestine.

in the small intestine. (Compare this with the report from the London Hospital.) These races are predominately vegetarian, and several authorities conclude that such vegetarian or bulky diets result in intestinal atony or chronic distention, thus largely contributing to a twisting of the bowel. It has been further pointed out that the proximal portion of the bowel distended by active purgation acting against a distal paralytic and collapsed part will largely contribute to the formation of a volvulus.

**Symptoms**—Prolonged constipation is the rule with attacks of abdominal discomfort, or pain with vomiting. Our patient, it has been seen, would vomit at the least provocation, and had a history of gastric distress for four years. This vomitus, however, is seldom fecal, as the bowel cannot empty itself in either direction when the volvulus involves the entire small intestine. Usually the vomitus is bilious or dark colored, blood is seldom vomited or passed in the stool, even though free blood or sanguinous fluid may be present in the peritoneal cavity and in the intestine. Abdominal pain is variable. Our patient had no pain. Many patients are often seized suddenly by generalized abdominal severe pain, usually centering about the umbilicus. It is plausible to assert that pain is sudden, severe, accompanied by shock where the twisting is sudden, causing an acute obstruction, and may be absent or a minor symptom in chronic obstruction. The abdomen is usually rigid, distended, and tympanitic. A rectal or vaginal examination may at times show a boggy mass in the rectovesical or the rectovaginal pouch. Temperature may be normal, above or below normal. Pulse is usually normal until collapse occurs.

**Diagnosis**—In the majority of patients it is impossible to make a more definite diagnosis than that of intestinal obstruction, and that is enough to indicate immediate laparotomy. The most unfortunate mistakes are liable to be made when a volvulus is associated with a visible hernia. Usually an actual diagnosis other than obstruction is impossible.

**Prognosis**—Without operative relief the mortality is 100 per cent. Of the total of the 77 cases recorded 57 were operated on, with recovery of 25,

or 43.8 per cent. All the successful operations were performed within less than forty-eight hours after the patients were first seen. Some reported operations were from ten hours to nine days after the symptoms began. The cause of death in these instances is due to injury to the sympathetic plexus produced by strangulation of the small intestine and rapid absorption of toxins.

**Treatment**—Operation as soon as diagnosis is made is the only hopeful method of treatment. That a difficulty in diagnosis can be met even after the abdomen is opened is borne out by the fact that four operators—Debie, Kirmisson, Delbet, and Delore—were unable to find the real cause of the obstruction. The detorsion of the volvulus is all that has usually been done, which seems to have proved all that was necessary, although Philipowicz advocates a suturing of a portion of the mesentery to the posterior abdominal wall.

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Vice-President Lee K. Frankel, *Metropolitan Life* (Health and Empire, June, 1926), relates that life insurance companies have "touched only slightly" the problem of syphilis. They have not held back because of lack of interest, but because syphilis (and other venereal diseases) is "so personal and intimate" that there are "peculiar difficulties in working out an effective plan."

Statistics gathered by the insurance companies appear to indicate a minimal "extra mortality" of at least 50 per cent among syphilitics who had been treated for two years, and who were free from symptoms for another year.

After deploring the incompleteness of morbidity and mortality statistics, realized by everyone as so inadequate as to be practically valueless, Frankel believes that because of intimate relation between carrier and policyholder "it is questionable whether the insurance company may intrude itself into the privacy of the policyholder's home to carry on a campaign of social hygiene." So the insurance companies "have left this type of work to public health agencies."

"However," says the author, "the day may not be far distant when insurance companies may undertake a comprehensive educational campaign."



OBSERVATIONS ON USE OF LIVER  
EXTRACT

By LOUIS E. MAHONEY \*

WITH the great prolongation of life which has occurred in the last twenty-five years, and which is largely due to better sanitation and the advance of scientific medicine, there are necessarily more people living to greater ages and more suffering from high blood pressure. The search for some method for lowering blood pressure has been very thorough and very persistent, but until recently quite fruitless. About two years ago a group of Canadian investigators—MacDonald, James, Laughton, and Macallum—and a group at the University of Kansas, Major and Stollard have done considerable experimenting with extracts of liver tissue. Their observations have been scientifically controlled, and were not published to the profession until both these independent groups of investigators felt they had elucidated some new medical truths.

It has long been known that extracts of almost any tissue injected into the human body or that of a laboratory animal will produce a fall in blood pressure. However, extract of kidney and spleen usually produces a rise. The decline produced by tissue extracts is probably due to histamine, choline, peptones or proteoses. The investigators have prepared their extract in such a way that they feel quite certain all of these above-listed chemical compounds have been completely eliminated from the final product. Major of Kansas City, in a series of experiments performed on dogs has secured an entirely different set of graphic tracings with the liver extract than were produced by histamine. It is quite well authenticated that in the metabolism of protein foods certain substances are produced which have vasoconstrictor, and blood pressure raising qualities. Among these may be listed tyramine and methyl guanidine. These are end products formed when nucleoproteins are broken down. Tyramine, by the way, is the active principle of ergot. It is the hypothesis of Major that methyl guanidine collects in the blood and tissues upon failure of the kidneys to excrete it, and this substance, with possibly other blood pressure raising compounds, are the cause of the clinical condition known as essential hypertension. Graphic observation and animal experimentation shows that methyl guanidine injected into a cat or dog produces a marked rise in blood pressure and that liver extract will very quickly reduce the pressure to normal. This observation has been the tentative basis for methods of standardizing hepatic extract. The unit has been arbitrarily fixed as the amount of liver extract necessary to counteract the

rise in blood pressure produced by the injection of 1/10 of a milligram of methyl guanidine into the vein of a cat or dog weighing about 2.5 kilos.

Both the Canadian investigators and the Kansas City school feel that hepatic extract is of decided benefit when confined to essential hypertension. By essential hypertension I mean persistently elevated blood pressure in individuals in fairly good health with no eye symptoms, no discoverable foci of infection, no arteriosclerosis, and no abnormal urinary findings. It is not felt that the extract is of benefit when the arteries are sclerotic or when there is demonstrable kidney change. It is necessarily difficult to evaluate this method because there are so many things that will temporarily reduce blood pressure, and many new treatments have been proposed in the past and later rejected as worthless.

The method of administration of liver extract is as follows: The patient reports for observation every day or every other day. Blood pressure readings are taken before the dose of 1 cc. is given and thirty minutes and one hour afterward. Patients report every day or every other day for several weeks. Five grains of the dried extract is given by mouth, two or three times daily, as it is believed that there are some effects secured by oral administration. In small series of some half-dozen patients which I feel to be definitely essential hypertension, favorable results have been obtained. Thirty minutes after the hypodermic injection of doses varying from 1/2 cc. to 2 cc. of the extract the systolic pressure has almost uniformly dropped from 6 to 30 milligrams of mercury. In some instances diastolic pressure dropped and at other times it became higher. The patients were all individuals at the fifth or sixth decade of life and in reasonably good condition, who had had their hypertension for a number of years, but were suffering from various subjective symptoms, such as headache, sleeplessness, ringing in the ears, weakness, etc. Every patient in this small series expressed themselves as feeling better. The initial systolic reading varied from 240 to in the neighborhood of 170, and after treatment for several weeks the average reading varied from 180 to 145. In instances where the pressure has still remained high the patients have noted relief from distress and subjective symptoms, and pronounce themselves benefited. The initial doses should be very closely supervised, as a sharp fall may be produced and collapse supervene. Adrenalin should always be near at hand for emergencies. The ordinary restrictions with regard to exercise, diet and hygienic measures are, of course, observed. After the injection the pressure remains lowered twelve to twenty-four hours, and then slowly climbs back almost but not quite so high as previously.

While it is too early to form any definite conclusions from such a small series of cases among the especially favorable individuals, nevertheless one cannot help but obtain clinical impressions. My feeling is that liver extract properly used in essential hypertension will almost always temporarily, and frequently permanently reduce the pressure, and if it does not reduce the pressure it will at least improve the subjective symptoms and give the patient the feeling of well-being.

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## TRICUSPID DISEASE

By WILLIAM J. KERR AND L. F. MORRISON\*

(From the Department of Medicine, University of California Medical School, San Francisco.)

DISCUSSION by James F. Churchill, San Diego; Eugene S. Kilgore, San Francisco; Donald J. Frick, Los Angeles; Franklin R. Nuzum, Santa Barbara.

**O**RGANIC disease of the tricuspid valve is seldom recognized clinically. Relative insufficiency of the tricuspid valve, however, is extremely common in cases presenting passive congestion, associated with dilatation of the right heart. The presence of an enlarged heart, cyanosis, pulsating liver, distended and pulsating peripheral veins, ascites and general anasarca in patients complaining of dyspnea point to right heart failure. In such cases a soft, blowing systolic murmur, which often has a musical quality, is frequently heard over the ensiform cartilage or at the epigastrium. This murmur varies from day to day and may entirely disappear as the function of the right heart is restored by treatment.

Organic lesions of the tricuspid valve are most

often observed in rheumatic heart disease. The condition is, with few exceptions, first suspected at the postmortem examination, and the tricuspid valve is rarely involved alone. In a series of 97 cases of rheumatic endocarditis studied by Coombs, the mitral valve was involved in all instances, the aortic in 57, the tricuspid in 35, and the pulmonary valve in but two cases. Other authors have reported the frequent occurrence of tricuspid endocarditis in rheumatic heart disease at the postmortem table.

Acute endocarditis of the tricuspid valve is not infrequently observed in cases of septicemia. In such instances the vegetations are more of the thrombotic type. They may be suspected in puerperal sepsis or in septicemia following infections in the pelvis where embolism occurs in the lungs.

Tricuspid endocarditis is commonly associated with congenital heart lesions involving the pulmonary valve or the septum of the heart.

In the rheumatic group tricuspid endocarditis is three or four times more common in women than in men. The age incidence is practically the same as for mitral stenosis, being more often noted between the ages of twenty and forty.

The tricuspid valve is normally a variable structure. The size and arrangement of its papillary muscles and the thinness of the right ventricular wall predispose to insufficiency of this valve. Excitement and exertion, even in the normal individual, may give a temporary stretching of the tricuspid ring, sufficient to permit regurgitation through the valve orifice. When endocarditis occurs the valve leaflets become thickened, the cordae tendinae shorten, and the orifice may not close completely in systole. The triangular shape of the valve prevents the narrowing of the orifice as is seen so often in disease of the mitral valve. Consequently, tricuspid stenosis, of marked degree, is relatively rare.

When the tricuspid valve is insufficient, the right auricle becomes dilated and hypertrophied because of increased intra-auricular pressure during systole of the heart. As the process continues, the vena cava shares in the dilatation and the liver becomes distended. The liver may show systolic pulsations. The peripheral veins are engorged and frequently pulsate in the neck, arms, forehead and in the retina. These pulsations are systolic in time and are known as stasis waves, being propagated along the distended veins. There is no passive congestion of the lungs unless there is also rather marked mitral disease. Ascites and edema are commonly noted.

Tricuspid stenosis interferes with the flow of blood from the right auricle to ventricle. When the narrowing of the valve is marked, the right auricle is greatly enlarged and stasis in the vena cava is suggested by cyanosis, distended veins, enlargement of the liver, ascites and edema. The right auricle, and inferior vena cava in the chest, may become a large dilated sac. The auricles, in such cases, are usually fibrillating. The pulsations in the liver and in the peripheral veins may be systolic in time or, in tricuspid stenosis with a regular rhythm, the pulsations in the liver may show three waves similar to the normal jugular pulse and the "a" wave in the jugular pulse may be prominent.

The frequent association of lesions of other valves

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with tricuspid endocarditis tends to confuse the symptomatology. Only general rules, therefore, can be formulated. Marked cyanosis and dyspnea on exertion, weakness, cold hands and feet, tenderness in the upper abdomen, and cerebral disturbances are common complaints. The physical examination shows variable signs of chronic passive congestion; the liver is generally enlarged and pulsating; the veins are engorged and frequently pulsating. The spleen may be enlarged but is seldom noted clinically. Jaundice may be observed and, when present, is a grave sign. The urine is scanty and may show albumin, blood cells and casts.

Inspection frequently reveals pulsations in the fourth and fifth interspaces to the right of the sternum. Epigastric pulsations, if present, may be due to an enlarged right ventricle or to a pulsating liver. The jugular veins are distended and fill from below. Pressure over the liver causes greater distention of the jugular veins.

Palpation rarely shows a systolic thrill over the lower sternum or in the epigastrium in tricuspid insufficiency. In tricuspid stenosis the thrill may be of the coarse type, occurring very late in diastole. The thrills do not differ greatly from those noted in mitral stenosis and insufficiency, although the location, nearer to the epigastrium or to the right of the sternum, should suggest tricuspid disease.

The heart is usually enlarged to the right, but the size and shape of the heart depends upon the number of valves involved and the degree of their involvement. Many of the hearts are triangular in shape with a broad base resting on the diaphragm. In those cases with involvement of the tricuspid valve, alone, the right auricle may be greatly enlarged and the right ventricle may be normal or reduced in size.

The rhythm is regular early in tricuspid disease, but as the myocardium becomes more involved, auricular fibrillation or flutter supervene.

On auscultation the heart sounds suggest the lesions of the other valves involved. With mitral stenosis the pulmonic second sound is accentuated and the first sound at the apex is loud and snapping. In aortic insufficiency the aortic second is diminished or replaced by a blowing diastolic murmur. In cases of tricuspid insufficiency a systolic murmur is often heard over the lower end of the sternum, just to the right of the sternum, in the fourth interspace or in the epigastrium. As stenosis develops, a mid-diastolic or late diastolic crescendo murmur, similar to the so-called presystolic murmur of mitral stenosis, may be heard. With the onset of auricular fibrillation, the presystolic murmur may disappear as in mitral stenosis. The similarity of these murmurs to those of mitral stenosis and insufficiency often makes the diagnosis difficult. If the condition is suspected and the murmurs carefully studied, it will be noted that the murmurs due to the mitral lesion are most marked at the apex and tend to diminish as lower sternum is reached. It is in this region that the murmurs of tricuspid disease appear. The difference in pitch and duration in the cardiac cycle may help in diagnosis. The systolic and diastolic murmurs of disease of the aortic valve should also be differen-

tiated from murmurs arising from lesions of the tricuspid valve.

The diastolic murmur of aortic insufficiency may, at times, be best heard in the third and fourth interspaces, just to the left of the sternum, and the presystolic or Austin Flint murmur of aortic insufficiency may make detection of the tricuspid stenosis murmurs difficult. In aortic valve disease, however, we seldom see the marked signs of embarrassment of the right heart such as are seen with tricuspid disease.

Polygraphic tracings are of value in demonstrating the positive venous pulse in the jugular veins and the systolic pulsations in the liver in tricuspid insufficiency. When tricuspid stenosis appears, the "a" wave or auricular wave in the jugular tracing is prominent, and there may be a presystolic pulsation of the liver. With the onset of auricular fibrillation, the "a" waves disappear from the jugular tracing and the presystolic pulsations are absent in the liver tracing. The rhythm becomes absolutely irregular.

The electrocardiogram is variable, but in many instances shows right ventricular preponderance. Lesions of other valves, myocardium and pericardium, contribute to the variations from the normal. Irregularities and conduction defects are commonly observed.

The differential diagnosis between organic and relative tricuspid insufficiency is made on a careful analysis of the history and physical findings. A history of rheumatic heart disease, congenital heart disease, or septicemia may suggest tricuspid endocarditis. Relative tricuspid insufficiency is commonly associated with chronic mitral endocarditis, pulmonary disease, anemia, degenerative disease of the coronaries and myocardium and in many other conditions. The variability of the physical signs and the prompt response to treatment are against a diagnosis of organic disease of the tricuspid valve. There may, however, be a slight degree of organic disease of the valve and a marked degree of relative insufficiency of the valve when the right heart fails.

Patients with organic tricuspid disease present great disability, frequently over many years. Their field of cardiac response is greatly diminished, dyspnea appears on slight or moderate exertion, and cyanosis is an outstanding feature. A constantly enlarged liver and ascites are of diagnostic importance.

The prognosis depends on the degree of the involvement of the tricuspid valve, the condition of other valves, and the extent of the myocardial damage. The activity of such individuals is greatly limited and the sufferers, toward the end, are bed-ridden most of the time. Death may occur from many causes associated with disease of the myocardium, conduction system, or pulmonary embolism.

The treatment is the same as for chronic endocarditis and myocardial failure. A sedentary life is voluntarily assumed by the patient but excessive exertion should be prohibited. Care should be taken to prevent infections and foci of infection should be removed. Pregnancy is contraindicated.

The foregoing statements are based on ten years' experience in cardiovascular disease. During this time 95 cases of tricuspid insufficiency were diag-

nosed during life. In twelve cases out of 25 coming to postmortem examination, the tricuspid valve was found to be the seat of endocarditis, but in only three of these twelve cases was the condition recognized during life. In other cases where tricuspid endocarditis has been suspected, there has been no opportunity to examine the heart after death. In only a few cases, reported in the literature, has the diagnosis been recognized during life.

#### DISCUSSION

JAMES F. CHURCHILL, M. D. (704 Electric Building, San Diego).—Tricuspid disease is of clinical importance because of its bearing on prognosis and the added restrictions which its presence imposes upon the activities of patients with heart disease.

The persistence of relative tricuspid insufficiency in mitral disease is evidence of much graver myocardial degeneration than in those patients in whom the insufficiency disappears under appropriate care. I plan for a very different future for the patients of the former class, knowing that their reserve will be low and their activities therefore correspondingly restricted. If the lesion is recognized and the patient managed accordingly, it may be possible to prevent serious breaks in compensation for an indefinite time.

As regards the differential diagnosis between organic and relative tricuspid insufficiency I believe it is often possible to make a differentiation from observation of the clinical course. A patient with mitral disease and a tricuspid insufficiency probably has an organic tricuspid if the signs of pulmonary stasis clear up satisfactorily while the liver stasis and edema of the lower extremities persist beyond the time when one would reasonably expect them to disappear. In other words, left heart compensation occurs, without corresponding efficiency of the right heart. I am aware that interpretation of this point is rather indefinite and will vary with the observer, but it is one which has been borne out many times by my clinical experience.

EUGENE S. KILGORE, M. D. (490 Post Street, San Francisco).—The authors and Churchill have expressed well the difficulties of interpreting physical signs, especially murmurs in the diagnosis of tricuspid disease. At times it may be quite impossible to decide between organic tricuspid insufficiency and incompetence from stretching in the presence of severe crippling of the left heart.

Fortunately, for the practical purpose of treatment, if we take note of the general state of the circulation, we experience little handicap by reason of doubt about which valves are deformed. Prognosis, however, is more influenced by our conception of the condition of the tricuspid valve. When its function is impaired the blood current receives no compensating propulsive assistance from farther back in the circuit until stasis has reached clear through the hepatic and general circulation. This is in contrast with mitral and aortic lesions. In the former, the right ventricle is able to help through the comparatively short pulmonary circuit; and in the latter the left ventricle takes up the extra load, and if it fails to do so completely it receives further support from the right heart.

Theoretically and as a matter of experience, therefore, a given amount of valve damage is best tolerated on the aortic leaflets and worst on the tricuspid. In cases of supposed mitral disease that "slip" unaccountably, a complicating tricuspid disease should therefore be suspected. Cases of aortic, mitral and tricuspid disease pursue so typical a downward course as almost to warrant considering them a separate clinical entity.

DONALD J. FRICK, M. D. (1136 West Sixth Street, Los Angeles).—Dr. Kerr's article is timely as it brings to our minds again the pertinent facts in regard to tricuspid disease.

1. Its rarity as an organic affection and its frequency as a functional insufficiency. The tricuspid is affected in less than 1 per cent of all cases of valvular disease. Slight dilatation of, or back pressure in, the right ventricle will

cause functional tricuspid insufficiency on account of the poor architecture of the valve and its supporting structure.

2. The difficulty in diagnosis of organic lesions, and the ease of diagnosis of functional insufficiency of the tricuspid valve. Inflammation of the tricuspid valve practically never occurs alone, the resultant damage to the other valves making it difficult to segregate the murmurs of tricuspid disease. Functional insufficiency is always suspected and usually proved present when we have venous stasis and an enlarged right heart.

3. The bad prognosis in cases with regular rhythm and tricuspid insufficiency.

4. The fact that the history, symptoms, and physical findings are more valuable in diagnosis than the data gained by instrumental means. The latter is supplementary and may be confirmatory.

5. Personal experience always adds to human knowledge.

FRANKLIN R. NUZUM, M. D. (Cottage Hospital, Santa Barbara, California). The infrequent antemortem diagnosis of organic disease of the tricuspid valve is strikingly borne out by R. C. Cabot in reviewing 1906 instances of cardiovascular disease that came to autopsy. In only 33 of these 1906 instances was tricuspid endocarditis present and then always as a stenosis in combination with stenosis of the mitral, aortic or pulmonary valves. In only one of these 33 instances was tricuspid disease suspected during life. Doctors Kerr and Morrison are to be congratulated in having demonstrated grossly tricuspid endocarditis in 12 of 23 instances that came to postmortem examination.

The infrequency of clinical diagnoses of lesions of the tricuspid valve are due in part to their less frequent occurrence, but in greater part to the fact that they are not thought of. A clinical diagnosis of mitral regurgitation is frequently made when mitral stenosis exists, and stenosis is the more important lesion. Cabot's work demonstrated tricuspid stenosis in each instance in which tricuspid endocarditis was found. This concept seems to disagree with the views expressed by the authors and the first of the discussants. It agrees, however, with the few instances of tricuspid endocarditis in my own experience, each of which at postmortem presented a tricuspid stenosis in combination with stenosis of one or more of the other valves.

A particular aid in proving the presence of a lesion of the tricuspid valve, either insufficiency or stenosis, is the detection of peripheral vein pulsation. Recent publications by Kerr and William Middleton have dealt with this phenomenon and is perhaps the reason for only its mention in the present paper. Periphereal vein pulsation is easily elicited if it is present. With the patient in the recumbent position, the extended arm is first lowered over the side of the bed until the periphereal vessels are well filled. Then the examiner, with his eye on a level with, for example, the median basilic vein, slowly raises the arm. When it is approximately horizontal with the patient's body, the vein will be seen to pulsate synchronously with the heart beat. This means the existence of a tricuspid lesion. Further effort should be made to demonstrate the presence of stenosis since this lesion is of such prognostic importance.

It is, as we understand it, the earnest desire of the trained nurse to rank as a professional worker, and to tread the path side by side with the physician. That being so, she must assume the noblesse oblige of the medical profession, lay her talents at the feet of the world that needs them, and, while properly demanding an adequate compensation worthy of the dignity and value of her services, she must gauge that value, not from a fixed table of figures, but by the ability of the patient to pay, and must not set her ministry above anybody's reach. If nursing is to be an avocation, and not a trades-union, it must abandon its hard-and-fast scale of prices and adopt a schedule which is elastic in each direction, which will enable the nurse to earn a proper and adequate recompense without shutting the door of her ministrations to any that need them.—Editorial, *Medical Standard*.



## THE EFFECT OF GASTRIC JUICE ON CARBOHYDRATE DECOMPOSITION BY YEAST

By ROBERT G. BRAMKAMP\*

Stanford University, California

JUDGING from the literature, there have been no experiments *in vitro* to determine in any accurate way what effect the gastric juice has on yeast fermentation. It is stated in many books that gastric juice has a bactericidal action and that it checks fermentation, but that in certain pathological conditions, due to a reduction of the hydrochloric acid, the fermentive processes are increased. The only published work in this line to which reference can be found is that of Gregerson.<sup>1</sup> This investigator found that the bactericidal action was almost entirely due to the hydrochloric acid, and that the effect of the pepsin was insignificant. No disinfectant action was manifested when the juice did not react with congo red paper. The stomach contents giving this reaction from other acids than free hydrochloric did not show disinfectant action. The bactericidal power was determined to be proportional to the content of free hydrochloric acid.

Through the agency of the recent advertising campaigns yeast has become a rather widely used article of the diet, and it seems, therefore, that it would be of theoretical interest and some practical value to determine to what extent the hydrochloric acid or other constituents of the gastric juice affect fermentation and to what degree. These experiments are concerned with the alcoholic fermentation by yeast of one carbohydrate, glucose. Pure enzyme extracts are purposely not used because it is in such a form as the yeast cells that the agents producing fermentation enter the alimentary tract.

### EXPERIMENTAL

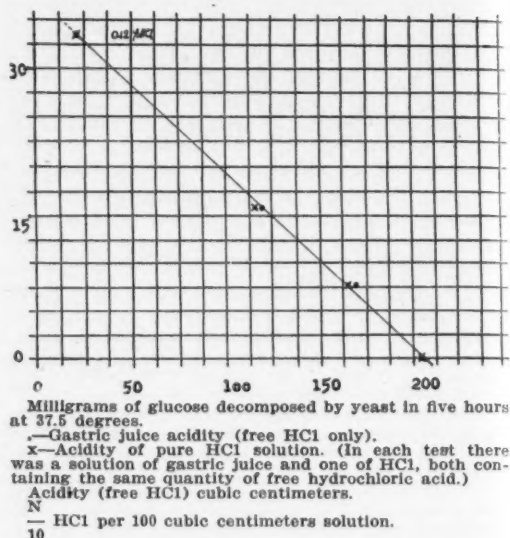
The gastric juice was obtained by the use of a Rehfuß tube with a modified tip. According to Hawk<sup>2</sup> the secretion of the juice takes place as well following the ingestion of water as of the test meal. Using this method, one may obtain a juice free from foreign matter, and more suitable for use in exact experiments. In these experiments, especially, would it be undesirable to have any sugar present in the collected juice, because the sugar concentration must be known accurately.

The gastric juice was collected in the morning, no food having been taken since the previous evening. Three hundred cubic centimeters of water were ingested, and 45 to 50 minutes later the stomach tube was swallowed and the entire contents of the stomach were aspirated.

The juice was strained through cloth, and was then analyzed by Töpfer's method<sup>3</sup> for (1) total acidity; (2) free acidity; (3) free hydrochloric acid; (4) combined acidity; and (5) acidity due to organic acids.

Standard 10 per cent solutions of dextrose were used, these being subsequently diluted in the tests to give a concentration of 2 per cent glucose. The sugar concentration was kept constant throughout

FIG. 1—RELATION OF THE DECOMPOSITION OF GLUCOSE BY YEAST TO THE ACIDITY OF GASTRIC JUICE AND OF PURE HYDROCHLORIC ACID SOLUTIONS.



the series so as to make the results more comparable. In these experiments each test solution contained 500 mg. of glucose.

The gastric juice, or substance the effect of which was being tested, was added in the specified quantity to 5 cc. of the dextrose solution. A piece of Fleischmann's yeast accurately measured and weighing 0.120 gm. was then added and the whole was made up to 25 cc. with water. The mixture was incubated at 37.5 for five hours, and after that time the amount of dextrose remaining in the solution was determined by the use of Benedict's quantitative sugar reagent.

Knowing the concentration of the sugar in the original solution, the degree of action is evidenced by the difference between the original concentration and that determined at the end of the test. Controls, in which no gastric juice was placed, were run with most of the tests to show the amount of action which would normally take place.

### DISCUSSION

Due to the fact that the different samples of juice varied in acidity, it is not convenient to average a group of results, therefore a typical series will be taken to show the facts.

Figure 1 illustrates the effect of different concentrations of juice on the decomposition of the dextrose. With no juice present there were decomposed 205 mg. of dextrose, out of a total of 500 mg. originally present. (It must be remembered that the optimum temperature for zymase is much below 37.5.) As is shown in the chart, the action of the yeast decreases in a relatively direct proportion with the increase in concentration of hydrochloric acid. When a mixture is reached having an acidity of 32.2 cc. tenth-normal hydrochloric acid per 100 cc. of solution (the most concentrated used), only 20 milligrams of dextrose are broken down in five hours. This represents about 4 per cent of the total

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sugar content of the solution, and is not much more than the limit of error in these experiments. Since the concentration of hydrochloric acid (free) in this case was about 0.12 per cent, and since the normal concentration of the acid in the mixed juice in vivo is 0.12 to 0.20 per cent, it is evident that the yeast action is decomposing the carbohydrate in the normal stomach is very slight.

The next step was to determine what constituent of the gastric juice exerted the inhibitory action. A solution of hydrochloric acid was prepared having a concentration equal to that of the free hydrochloric acid in a sample of juice. Parallel runs were made using the gastric juice in one set and the acid solution in the other. The results are plotted in Figure 1. It is seen that the correspondence in the two series is very close, showing that the hydrochloric acid in the juice is practically entirely responsible for the inhibitory effect. In cases involving a reduction of free hydrochloric acid in the gastric juice, then there would be a possibility of the action of fermentive organisms or their enzymes on foods.

#### SUMMARY

The following facts should be of interest to physicians:

1. The effect of gastric juice on the alcoholic fermentation of dextrose by yeast in vitro has been determined. There is a direct relation between the acidity of the juice and the inhibition of the fermentation.

2. At a concentration of hydrochloric acid of 0.12 per cent the action of the yeast is very slight. At the usual acidity in vivo there may be safely said to be no appreciable carbohydrate decomposition.

3. The factor almost wholly concerned with the inhibition is the free hydrochloric acid of the gastric juice.

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**Three Million Deafened School Children**—Recent surveys of the condition of the hearing of school children in the United States indicate that more than 3,000,000 have hearing defects. The detection and the medical handling of these deafened children are discussed by Edmund Prince Fowler and Harvey Fletcher, New York (*Journal A. M. A.*), and the results of some extensive tests given. It is suggested that each school should have permanently a quiet room for the examination of the eye, the ear, the nose, and the throat. Each school should have access to a phonograph audiometer (Western Electric Company, No. 4-A), equipped with forty telephone receivers or its equivalent and a tone range audiometer (Western Electric Company, No. 2-A), or its equivalent. Special classes for lip-reading should be provided in each school during school hours for the deafened child, which should be conducted by teachers trained to impart this knowledge. (This is now being done very efficiently in several schools.) Special schools for the deaf should be provided for those having a great hearing loss. The amount of deafness requiring this special care should be determined from experience, after the first method of teaching has been put into practice.

## EXPERIENCES WITH THE BISMUTH TREATMENT FOR SYPHILIS

By IRWIN C. SUTTON \*

DISCUSSION by H. P. Jacobson, Los Angeles; Robert V. Day, Los Angeles; Samuel Ayres, Jr., Los Angeles; M. W. Hollingsworth, Santa Ana; Howard Morrow, San Francisco; Harry E. Alderson, San Francisco.

THE fog of secrecy which surrounded the formulae of the various bismuth preparations has been gradually lifted until it is possible at present to read on the label exactly what percentage of the drug is present and in what form. American products are superior to foreign ones in tolerance, therapeutic efficiency, character of promotion and accuracy of labeling. The products of the Metz Laboratories, of Powers and Weightman, the Dermatological Research Laboratories, and Parke, Davis & Company are made by Americans and should be used by us. A tabloid description of the more common preparations follows:

**Tartrobismuthate of Potassium and Sodium** was the first product to be employed in the treatment of syphilis. The insoluble form is an "emetic of bismuth." It contains from 40 to 60 per cent of bismuth suspended in oil. Sazerac and Levaditi have established that 0.01 gm. of the tartrobismuthate per kilogram will make the treponemata disappear from active lesions in the rabbit in two or three days. They conclude that the therapeutic dose is, therefore, much under the toxic dose. For use in man they advise intramuscular injections. Fournier and Guenot have experimented to find the optimum effective dose in man and advise 0.10 gm. per day. They give the injections of 0.30 gm. twice a week, giving, therefore, 2 to 3 gm. a month. In instances of intolerance they advise the diminution of each dose to a biweekly one of 0.10 to 0.20 gm.

Ampules of two or three cubic centimeters contain a white deposit formed by the salt, surmounted with a layer of transparent oil. In order to render the product homogeneous the ampule must be shaken vigorously. A very satisfactory preparation is made by the Dermatological Research Laboratories of Philadelphia.

**Soluble Tartrobismuthate** (Curalues Soluble, Tarbisol Solution, Luatol, Sigmuth, Bismosol) contains about 48 per cent of active bismuth. Jeansele has employed it in a glucose and carbolic acid solution in a dose of 0.10 per cm. It is given every two days in a series of twenty injections. It exists in two other preparations, an aqueous solution of bismuthotartrate of diethylamine, and in an aqueous solution of tartrobismuthate in sulphur medium, a dose of 0.05 of bismuth metal per each ampule of 2 cm. (Sigmuth). The injections may be given twice a week in the muscles. This product is manufactured in this country by Powers-Weightman-Rosengarten, and I am glad to testify to its potency and tolerance.

**Iodobismuthate of Quinin** (Quinobismuth or

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Quinby; Erythrolues, Rubyl). This drug is obtained by the action of iodoquinine on a solution of nitrate of bismuth.

It contains about 30 per cent of metallic bismuth and is, therefore, less rich in bismuth than tartrobismuthate; but with the combined action of the quinin and the iodide against the protozoa, its action is possibly more efficacious than the others. The drug is of a vermilion color and is held in a 10 per cent solution of oil. Certain preparations contain only 5 per cent.

Injections are given in 0.20 to 0.30 gm. until 3 gm. of iodobismuth is given in a month.

**Phenylformitate of Bismuth (Bismudol)** is put out by the H. A. Metz Laboratories of New York, in compressible ampules. Each "collapsule" contains 3 grains, or 0.19 gm. of the phenylformitate of bismuth suspended in palmitin, representing 68 per cent of metallic bismuth. This combination permits slow and complete absorption and may be adapted for "depot" treatment. Due to the fine state of division of the powder in the fatty excipient, this product is exceedingly well borne when given deep into the muscles. There is almost complete lack of pain and soreness after its use.

After sterilizing the flexible capsule with alcohol, the end is clipped off and the drug is expressed into a comfortably hot syringe. Injection is then made after assurance that the tip of the needle is not in a blood vessel. Injections are administered twice weekly until twelve or sixteen are given.

**Bismuth Metal (Neotrepol).** Sazerac and Levaditi have obtained the metal in a fine state of division by the reduction of the tartrobismuthate of sodium. The bismuth is then held in suspension in a 10 per cent dilution of an isotonic solution.

Following experimentation on rabbits, this product was extensively used in man by Fournier and Guenot. The therapeutic dose is 0.15 gm. to 0.20 gm. per injection. The total dose is 2 gm. of bismuth administered in a series of ten to twelve injections given twice a week, given deep in the gluteal muscles. I have seen some frightful abscesses from its use.

**Bismuth Salicylate**, made by Parke, Davis & Company is very popular in this country. Like all insoluble drugs it is slowly eliminated, although paradoxically it seems to be rapidly absorbed, according to the work of Schiller. It is put up in ampules of 0.13 gm. (2 gr.) in olive oil with the addition of 10 per cent camphor and 10 per cent creosote. At the time of injection it casts a much more marked shadow in the muscles, according to the roentgenograms taken by Charles W. Stewart, than does the tartrobismuthate. Only a faint shadow is found after a week following the injection. Juliusberg approves of the intramuscular injection of the insoluble compounds, for, "while this method is open to many disadvantages theoretically, the advantages actually offset them." This method may lead to accumulation with sudden absorption and undesirable complications, but he believes its value to the patient is incomparably greater than soluble compounds given intramuscularly or intravenously. The "depot" treatment, as pointed out by Levaditi,

allows the patient to continue to receive treatment after the injections have been stopped. Where rapid saturation of the body is desired it would seem best that a soluble compound be used first.

The dose is one ampule three or four days until twelve or fifteen injections are given according to individual indications. This drug should never be given intravenously. It is well tolerated by the muscles, and local reactions are few. It may in susceptible persons produce severe stomatitis effectively relieved by graduated injections of sodium thiosulphite.

Since the introduction of bismuth therapy in this country I have followed a modification of Stokes' technique in the intramuscular injection of this drug. Briefly, this consists of the following points:

The patient lies prone on his abdomen with the feet "toed in."

The needle attached to the syringe is inserted with a rapid down stroke into a point in the inner lower part of the upper outer quadrant of the hip.

The needle is detached and allowed to remain *in situ*, while the syringe is loaded with the well-shaken contents of the ampule.

The injection is then slowly made with the final insertion of an air bubble to clean the needle and the needle track.

#### TREPONEMACIDAL ACTION

The treponemacidal action of bismuth is very powerful. The organisms disappear rapidly from the contagious lesions. Sazerac and Levaditi could not recover viable organisms from either chancre or mucous lesions after the first or second injections three or four days after treatment was instituted. This energetic treponemacidal action is revealed clinically by the Herxheimer reaction, which may be provoked by the first injection. "The roseola often becomes red and confluent and the temperature may rise to 100 degrees F. six to twelve hours after treatment."

Jeanselme and Blamoutier have reported two cases of Herxheimer reaction. One with a roseola and the other with a papular reaction. In the second patient there was at the same time a marked hepatic congestion.

McCafferty believes that the immediate action of bismuth in primary and secondary syphilis is as effective as arsphenamin, although slower in action. Ehlers and Sloth found 20 per cent of Herxheimer reaction in secondary syphilitics treated by them. Marie has noted an erythematous reaction occurring at the site of a chancre and other lesions. He also has seen a reaction in the central nervous system, consisting of lightning pains and headache, return of a hemiparalysis, and similar reactions.

The action of bismuth on the chancre depends on the size and the amount of infiltration of the lesion. A chancre 4 to 6 mm. in diameter is cicatrized about thirteen days after four injections of a soluble salt; when the lesion is large and very indurated twenty or twenty-five days are necessary. Healing by bismuth therefore compares favorably with the results from other drugs. Klauder has found treponemata absent twenty-four hours after the injection of 0.2 gm. of bismuth.



The action on early skin lesions is rapid, headache, lassitude, and bone pains disappear the day after the first injection. Mucous membrane lesions heal four or five days after the beginning of treatment. The larger papuloerosive lesions heal after eight days and ten injections. The hypertrophic plaques are healed after fifteen or sixteen days. Infiltration remains sometimes as long as fifteen or twenty days and four or five injections. The skin lesions are often more rebellious than those of the mucous membrane. The roseola usually disappears with two injections. The papular syphilides vanish in fifteen or twenty days. The lichenoid eruption on the neck only disappears in about twenty days and five injections. Leucoderma colli is not influenced by treatment.

Bismuth treatment shows a marked efficiency in its action on the late cutaneous lesions of syphilis. A large ulcerated lesion on the buttock of several years' standing was healed in twenty-eight days and after seven injections. Osteoperiostitis and gummatous leg ulcers seem to be more favorably influenced by bismuth than by mercury. Schwartz and Levin believe that there is less danger of neurorecurrence during the secondary period than with the use of arsphenamin.

Three cases of malignant syphilis treated with bismuth have been reported in the French literature. One with numerous ulcerations and a general eruption of papular lesions was completely healed in a month after a dozen injections equivalent to a total dose of 3.60 of quiniobismuth. This is rather unexpected, for bismuth seems too depressing to be the drug of choice in malignant syphilis.

Bismuth seems to have a certain election for nervous tissue. Schiller found it in the spinal fluid within ninety-six hours after injection, and early nervous system syphilis responds well to the treatment. Following the work of Brown and Pearce, the conception of resistance building in the management of syphilis is becoming more appreciated. Klauder does not believe that bismuth inhibits immunologic reactions as arsphenamin probably does, and he expects to find less early neurosyphilis following irregular and lapsing treatment with it. In a case of acute syphilitic meningitis the headache disappeared after three or four injections, and paralleling the clinical improvement there was a rapid lowering of the lymphocyte count of the spinal fluid. Marie and Fourcade reported to the Society of Medicine of Paris (October, 1921), favorable results following the employment of hydroxide of bismuth. They recommend caution in commencing treatment for fear of provoking icterus and phenomena of excitation. These recommendations are essential in treating general paresis.

Diffuse syphilitic infection of the meningoencephalitis type is very rebellious to treatment. There is little to be done to prevent the profound degeneration of the cerebral cortex in general paresis. Only pseudoparesis seems ameliorated by bismuth. Bismuth does not change the positive Wassermann reaction in cases of confirmed general paresis. Localized lesions (gummata, arteritis, paraplegia, aphasia, etc.) are much more influenced by treatment. Hudelo and Milian have confirmed the happy re-

sults obtained by bismuth where there is an arsenical resistance or mercurial intolerance.

Several cases of tabes have been reported in the literature as being benefited by bismuth treatment. Improvement consisted in the disappearance of lightning pains, amelioration of bladder symptoms, and changes in the spinal fluid, consisting for the most part of a lowering of the cell and protein estimation. The encouraging results attained by Foster and Smith are summarized as follows:

"Twenty-three cases of tabes and ten cases of paresis were treated with bismuth and observed from four months to one year afterward. Improvement in subjective complaints was noted in nearly every case. The treatment was especially effective for pain, numbness, urinary disturbances, and ataxia. The prompt relief from severe pains was gratifying; some of the patients who had been chair-fast became able to walk. The incontinence and retention of urine were either completely relieved or improved in most cases. Impairment of vision did not progress in any case, and in one case it was definitely improved. The findings on neurologic examination were usually unchanged, and there was no marked influence on the serology. One case of paresis showed a remission following treatment which may or may not have been induced by treatment. Stomatitis and local indurations were the only ill effects, both of which can be avoided by proper precautions. In our experience bismuth has yielded as good results as any other form of antiluetic treatment in cases of tabes and paresis."

The more bismuth is employed in late syphilis the more its powerful action on the different localizations of syphilis is appreciated. Examples from the French literature are: amelioration of an aortic aneurysm (Fournier and Guenot); relief of a gastric ulcer when arsenic was not tolerated (Emery and Morin); amelioration of albuminuria still present after a month of the usual treatment (Lortat-Jacob and Roberti). Bismuth is better supported by patients who have renal sclerosis or albuminuria from various causes than are other drugs, and seems to be the drug of choice where treatment is complicated by the presence of kidney lesions. The recovery of a syphilitic sarcocoe followed after six weeks. It recovered its normal sensibility and volume in fifteen days (Lortat-Jacob and Roberti). A pregnant woman covered with an early syphilitic eruption gave birth to a healthy child at full term (Ehlers and Sloth).

The syphilitic origin of diabetes is the order of the day in France. Bory has reported to the Societé Medical des Hopitaux a cure with bismuth of a case of diabetic glycosuria occurring in a heredo-syphilitic. There was an arsenical treatment outlined to reduce the output of sugar, but this had to be changed because of arsenic intolerance.

#### ACCIDENTS AND INCIDENTS OF TREATMENT

About the most serious accident which may befall a patient under treatment with bismuth is a bismuth stomatitis. This is rare where the urine is watched for renal irritation and in those patients who take good care of their teeth and gums. As soon as the stomatitis is recognized the drug should be stopped,

a saline cathartic given and graduated doses of sodium thiosulphate administered. Next in importance is gluteal abscess and nodule formation from intramuscular injection. This may be prevented by a proper technique of administration, hot sitz-baths, red light exposures, and avoidance of too large a dose.

Nephritis and hepatitis are rare, but the ever present menace of the Herxheimer reaction must be remembered, especially in the presence of an acute process in an important structure such as the eye, central nervous system, or the heart. There is a certain depressing action attributed to bismuth which is expressed by lassitude, "bismuth pallor," some loss of weight, and anorexia. This is seen more often in those patients who are sensitive to arsenic and who, therefore, receive bismuth alone. I have found only one patient so far who was definitely resistant to bismuth treatment. He developed tertiary lesions of the skin a month after his primary lesion and after he had been heavily treated with bismuth. These only healed on the exhibition of arsphenamin.

Probably the main field of bismuth treatment is in those patients who cannot have arsenic because of an allergic type of response to it. Bismuth cannot be said to have dethroned arsenic as a remedy for syphilis, but it is a good substitute. It undoubtedly is a powerful resistance builder and if the conception of healing syphilis described by Brown and Pearce, and Warthin should become popularized, bismuth may become our sheet-anchor in the treatment of this protean disease.

#### DISCUSSION

H. P. JACOBSON, M.D. (1016 South Alvarado Street, Los Angeles)—I wish to compliment Doctor Sutton upon the timeliness of the subject-matter and the comprehensive manner in which he has presented it to us. There isn't much to be added to what he has so thoroughly covered except to emphasize that under no circumstances should bismuth be employed either in primary or early secondary syphilis as a substitute for or to the exclusion of the arsphenamins or their derivatives. I thoroughly agree with him that bismuth therapy has become definitely established as a remedy par excellence in the treatment of late secondary and tertiary syphilis as well as an adjunct to the arsenicals in primary and early secondary syphilis. While it is conceded by all recognized syphilographers abroad as well as in this country that bismuth is a definite spirocheticide, the position assigned to it in the therapeutic armamentarium is only secondary to the arsenicals.

One more point that I should like to call attention to in this connection is the possible toxic effects produced by this drug, which I have not seen recorded in the literature, and that is a peripheral neuritis. I had one such effect produced in one of my patients after several doses of bismuth. While the patient in question was an alcoholic, the possibility of an alcoholic neuritis was eliminated by a nationally known neurologist. A chemical examination of the urine in this case disclosed the presence of bismuth in sufficiently large traces to confirm our clinical impression that it was peripheral neuritis, due to the administration of bismuth.

ROBERT V. DAY, M.D. (Baker-Detwiler Building, Los Angeles)—Doctor Sutton has given us a splendid up-to-date digest of the world's literature containing the conclusions of many of the world's foremost syphilographers on bismuth therapy in syphilis.

Acknowledgment of the undoubted value of bismuth preparations in the treatment of syphilis was slow to come and gradual in its general acceptance. Only time and the researches and experiences of thousands of

syphilologists condensed into a reasonable perspective will assign to it its true sphere of usefulness. Like preparations of metals of the higher groups generally that are employed as treponemicides, one must constantly be on the lookout for toxic symptoms. Examination of the urine preceding the administration of each dose of preparations of bismuth, mercury, arsenic or silver should never be omitted. Occasionally one observes a leucopenia accompanied by a marked diminution in the number of red cells and hemoglobin percentage. A concomitant nephritis with the presence in the urine of much epithelium undergoing fatty degenerative changes, is occasionally observed if the treatment has been too energetic.

Sutton is to be commended for his terse analysis of the present status of bismuth therapy in syphilis.

SAMUEL AYRES, JR., M.D. (2007 Wilshire Boulevard, Los Angeles)—Bismuth has come to stay. I have used it now for about two years in the place of mercury, and I have yet to see my first untoward effect. I have seen it well tolerated in patients intolerant to arsenic, and also in one patient who developed local reactions to each injection of mercury. However, in one patient who has been Wassermann-fast for about six years it had no effect whatever on the Wassermann reaction and in one case of neurosyphilis with negative blood Wassermann and negative spinal fluid, but with Argyle-Robertson pupils, lightning pains, ocular ptosis and bladder incontinence, no improvement in symptoms was noted after more than thirty injections in two courses interspersed with sulpharsphenamin and triarsamid.

I have always used bismuth in courses of fifteen or twenty injections following a course of one of the arsenicals. My experience has been with Parke, Davis bismuth salicylate and with metallic bismuth, both of which have given complete satisfaction. Doubtless other preparations are of equal value.

Sutton has ably summarized our knowledge of the subject, and I agree in general with his findings.

M. W. HOLLINGSWORTH, M.D. (First National Bank Building, Santa Ana, California)—It has been a pleasure to read Doctor Sutton's paper on bismuth therapy, a subject with which he is so familiar. Bismuth is taking a place in the therapy of syphilis almost equal to that of the arsphenamins. Bismuth possesses the double advantage of combining the parasitocidal effect of the arsphenamins with the immunity building properties of the mercurials. It presents an ideal drug with which to begin treatment upon any excepting primary lesions.

Sutton quotes Schiller as having demonstrated bismuth in the cerebrospinal fluid. Several later investigators have been unable to confirm this. E. Jeanselme, M. Delelande, and Terris were unable to find bismuth in the cerebrospinal fluid, using the most sensitive chemical tests in a series of patients with cerebrospinal syphilis who had received various preparations of bismuth intramuscularly in large quantities.

At the White Memorial Dispensary in the last twelve months we have administered over 1100 injections of bismuth. After using a variety of proprietary preparations we have finally adopted bismuth subsalicylate, which we have our pharmacist make up in one ounce wide-mouth bottles at a cost of about \$2 per fifty injections. A solution of 2 per cent benzocain and 10 per cent camphor is effected in oil of sweet almonds by heat. On cooling, bismuth salicylate is triturated into this medium 10 gms. to a 100 mls., total volume.

Our observation shows no other bismuth salt to be in any way superior to the salicylate, which happens to be the least expensive. Toxic effects are usually due to too heavy a dose, which should be in exact relation to body weight.

We believe 0.1 gm. of bismuth per 110 pounds of body weight weekly from ten to twelve weeks to be adequate. A blue piston tuberculin syringe is ideal for properly graduating the dose.

HOWARD MORROW, M.D. (384 Post Street, San Francisco)—The advent of bismuth into the therapeutics of syphilis is most welcome because of the numerous instances in which the arsphenamins and mercurials are either poorly tolerated or contraindicated for other rea-

sons. The exact status of the drug in the treatment of syphilis has not been established. This will only be determined by years of scientific study. It is rather premature to state that bismuth will replace either mercury or arsenic in the treatment of syphilis.

Although animal experimentation would indicate that bismuth is a very powerful agent against the treponema pallida, personal as well as the experience of others does not fully corroborate this. Mucous patches of the mouth remained unchanged and constantly positive for treponema after three weeks of intensive bismuth therapy. A flat papular syphilide of the late secondary type remained unchanged after six weeks of a preparation of bismuth, to involute rapidly under neoarsphenamin. These experiences should lead us to a very careful study of the clinical value of the drug and encourage the gathering of data upon the subject.

HARRY E. ALDERSON, M. D. (490 Post Street, San Francisco)—Sutton's paper is very interesting, for bismuth therapy of syphilis has been on trial now for about five years and we are in a position to form conclusions as to its temporary effectiveness at least. In our clinic at Stanford and in private practice we have given over 5500 injections of the preparation. Bismuth has only been used on humans since 1921. It will take observations of many hundreds of cases over a period of years to finally determine its real value, and for the present it would be unwise to neglect other treatment. Although we are accustomed to seeing early and late lesions respond readily to bismuth medication, we find that the effects usually are brought about more slowly than by arsphenamin injections. In some few cases skin and mucous membrane lesions have continued developing during the course of bismuth injections. The next time this occurs we are going to increase the dose and shorten the intervals between treatments. Naturally some individuals might be expected to absorb the preparation more rapidly and more completely than others. Bismuth has proven to be a good substitute for the arsphenamins when for various reasons the latter had to be discontinued, but we feel that arsphenamin still is the most valuable agent in combating syphilis. The relative slowness of its action makes it inferior to arsphenamin in ridding active skin and mucous membrane lesions of spirochetes pallidae. We have had no accidents or serious complications.

At present we are using bismuth phenylformate (0.19 gm. dosage), and bismuth salicylate (0.13 gm. dosage). As we are averaging about sixty injections weekly, it would be very desirable if the preparations could be put up in large jars, but the manufacturers do not seem to feel that the mixture would remain long of uniform consistency if put up in bulk, so we shall have to continue using the small collapsibles and ampules containing individual doses.

**Kahn Test**—J. E. Houghton, Oscar B. Hunter and Thomas M. Cajigas, Washington, D. C. (*Journal A. M. A.*), regard the Kahn test as being a superior method for the serum diagnosis of syphilis. Unlike the procedure of the Wassermann test, which consists of arbitrary steps, the procedure of the Kahn test is based on a scientific foundation and is free from such steps. The Kahn test is comparatively simple, direct and rapid, enabling clinicians to obtain Kahn reports from laboratories within several hours after submitting blood specimens, and in emergencies in less than an hour. The Kahn test may be carried out everywhere in the world with the same degree of accuracy, thus rendering available a serum test for syphilis in the tropics and in other parts of the world where the Wassermann test, as a result of its complexity and use of animals, is either not available or available in a very limited degree. The Kahn test consists of three serum procedures and two spinal fluid procedures capable of giving clinicians far more information in connection with the diagnosis and treatment of syphilis than the Wassermann test. The Kahn test is more sensitive than the Wassermann test in treated cases and in the primary stage of syphilis. The test is also somewhat more sensitive than the Wassermann test in other stages of syphilis. The Kahn test has removed the serum diagnosis of syphilis from empiricism and placed it in the realm of quantitative science.

## THE DIAGNOSIS OF ADRENAL TUMORS

By THOMAS E. GIBSON \*

(From the Department of Urology, University of California Medical School)

*A differential diagnosis of adrenal tumors from other growths, as well as between cortical and medullary tumors of the gland itself, can be made as a rule by their clinical manifestations. The added information gained by a urological investigation is often of decided value.*

Adrenal tumors give rise to three distinct syndromes: (1) the genitosuprarenal; (2) the Hutchison; and (3) the Pepper.

The genitosuprarenal syndrome occurs only in cortical tumors (carcinoma, hyperplasia, adenoma) and is characterized in the female by virilism of pseudohermaphroditism, and in the male by precocious puberty. The sexual changes produced are always in the direction of the adult male type, irrespective of sex. The adult male shows no characteristic sexual alterations. Cortical tumors occur as frequently in infancy and childhood as in the adult.

Hypertension is frequently associated with cortical tumors.

Pigmentation occurs rarely in cortical tumors and never in medullary tumors.

The common tumor of the adrenal medulla is the neurocytoma, or "sarcoma." Medullary tumors are about as frequent in occurrence as cortical tumors. They are peculiar to infancy and childhood. Two types occur: (1) the Hutchison, characterized by early metastasis to the orbit producing unilateral exophthalmos, and (2) the Pepper, characterized by rapid abdominal enlargement due to metastasis to the liver. The primary growth generally remains small and may only be discovered at autopsy.

The prognosis in adrenal tumors is almost uniformly bad. Occasional cures are reported in cases of cortical tumors.

The treatment is surgical and radiological. A preliminary urological investigation is essential not only as a diagnostic measure, but to determine relative renal function, since it is often necessary to remove the kidney with the tumor mass.

In a series of 47,069 hospital admissions at the University of California Hospital, nine are recorded as adrenal tumors. Only four were proved primary adrenal tumors. They exemplify very well the three clinical syndromes produced by adrenal tumors.

DISCUSSION by A. A. Kutzmann, Los Angeles; Miley B. Wesson, San Francisco; William E. Stevens, San Francisco; H. Lissner, San Francisco.

THE physician is seldom called upon to make a diagnosis of tumors of the adrenal glands, yet he must frequently diagnose abdominal conditions, and in the differential diagnosis of many abdominal conditions adrenal tumors must be given due consideration. Often the adrenals are forgotten, and even though considered the lack of general knowl-

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edge of their clinical manifestations is responsible for many failures in diagnosis.

Adrenal tumors give rise to *three distinct clinical syndromes*. A knowledge of these renders the diagnosis of adrenal tumors comparatively easy not only in differentiating them from other tumors, but also in distinguishing between the cortical and medullary tumors of the adrenals themselves. Unfortunately most textbooks do not clearly portray these syndromes and the literature is fragmentary.

The object of this paper is to bring together the facts of clinical importance in the literature and as exemplified in a series of cases at the University of California Hospital.

#### INCIDENCE

The comparative rarity of adrenal tumors is shown by the statistics of Williams, who found but one in a study of 8378 tumors affecting various parts of the body; in 36, or over one-half of which the subject was a child. Ramsay, in 1899, collected but 67 cases of malignant adrenal tumor from the literature; Gallais (1912) 51 (including four of his own) of cortical tumors associated with sex alterations, all of them in women and children; Frew (1910) analyzed 51 (including three of his own) of medullary tumors of the adrenal. Cortical and medullary tumors, therefore, seem to occur with about equal frequency. From July, 1913, to March, 1926, there have been 47,069 admissions to the University of California Hospital. Nine of these are recorded as having adrenal tumors, four of which were proved primary tumors of the adrenal.

#### PATHOLOGY

Pathologically, adrenal tumors fall into two main groups: (1) carcinoma of the cortex, and (2) neurocytoma (sarcoma) of the medulla. Other types of tumor are too rare to be included here.

Cortical carcinoma, or hypernephroma, as it is also called, arises probably on the basis of cortical hyperplasia or adenoma formation. These benign precursors of carcinoma give rise to the same clinical picture of cortical adrenal tumor as does carcinoma itself.

Neurocytoma is the common tumor of the medulla. It is often called "sarcoma" in the literature. Probably the vast majority of the retroperitoneal "sarcomas" of infancy arise in the adrenal medulla.

#### SYMPTOMS

Adrenal tumors give rise to three distinct clinical syndromes:

- (a) Cortical tumors (carcinoma), (1) the genitosuprarenal syndrome.
- (b) Medullary tumors (neurocytoma), (2) Hutchinson syndrome; (3) Pepper syndrome.

(1) *The Genitosuprarenal Syndrome*—This symptom complex is seen in both benign and malignant conditions of the cortex, and throws interesting light on cortical functions. Hyperfunction of the adrenal cortex (hyperinterrenalism) is now a well-established clinical entity, and is responsible for certain very characteristic alterations in the sexual organs and secondary sexual characteristics.

These alterations are well exemplified in neoplasms of the adrenal cortex.

Changes are very strikingly exhibited in the female by the assumption of male sexual characteristics to which the terms "virilism" or "pseudohermaphroditism" are applied. Cortical tumors occur most often in the female, and are as frequent in infants and children as in the adult. The changes are more marked when they commence in utero before the sexual organs are differentiated anatomically than in the adult when the sex organs are already completely differentiated. Quinby has reported a classical example of the condition in a female who was raised as a boy because of the masculine mental status and male type of external genitalia. Collett (1924) has reported an instance of genitosuprarenal syndrome in a girl 1½ years old. She was pseudohermaphroditic and had an abundant growth of pubic hair commencing at 6 months of age. Development in the female is not only toward the male type, but is precocious as well. As early as the fifth or sixth year the child has the sexual development and secondary sexual characteristics of the adult. In some there is marked obesity, in others unusual muscular development. These children appear prematurely old, and if obese the fat has the distribution seen in an elderly individual. The clitoris assumes penile proportions, and there is a premature and abundant growth of hair on pubis, face, chest and legs, male type in distribution. In some instances the child is precocious mentally, in others mentality is impaired. The female libido sexualis becomes indifferent or masculine. In the adult female amenorrhea occurs in addition to the other changes already noted. In some instances in which excessive muscular development occurs, she finds herself capable of performing physical tasks previously impossible.

In the male infant or child the picture is much the same, that is, toward the adult male type. Precocious puberty occurs, and the child appears old far beyond its years. As a rule there is not a corresponding precocious libido sexualis. An exception is reported in Craterus, a boy who was in the course of seven years a child, a youth, an adult, a father and dead.

Summing up briefly, it may be said that the sexual changes produced by cortical tumors of the adrenal are always toward the adult type irrespective of sex. This statement receives further support in the fact that these tumors occurring in the adult male produce no sexual alterations.

Another symptom of diagnostic importance in cortical tumors is the frequent occurrence, particularly in the young of hypertension. Here we have another manifestation of adrenal physiology about which comparatively little is known. Moffitt has called attention to hypertension in hypernephromas of the kidney, but Keen, Pfahler, and Ellis (1904) believe that the symptom is too inconstant to be of value in diagnosis. Oppenheimer and Fishberg (1924), however, believe that it is of distinct value in cortical tumors of the adrenal. They state that diffuse hyperplasia or circumscribed adenoma formation in the cortex is very common in persons suffering from hypertension, whether nephritic or "essential." Hy-

pertension does not occur in medullary tumors (except in those very rare chromaffin tumors or paragangliomas. These authors conclude that one small group of cases can thus be removed from the great group of so-called "essential hypertension," and may well be termed "suprarenal hypertension." Sometimes in cortical tumor the blood pressure is either normal or below normal and the findings resemble closely Addison's disease, even to the asthenia and pigmentation. Pigmentation is uncommon in cortical tumors and never occurs in medullary tumors.

(2) *The Hutchison Syndrome*—Hutchison (1907) drew attention for the first time to the syndrome which now bears his name. He reported thirteen cases occurring in children from 3 months to 9 years of age. The disease begins spontaneously or after trauma, with ecchymosis of one or both eyelids followed by unilateral exophthalmus, or proptosis of the eyeball. A tumor of the orbit becomes apparent and the auricular and submaxillary lymph nodes are enlarged. The primary growth in the adrenal may remain small and escape discovery until autopsy. The kidney is early surrounded and invaded by the tumor. Metastases to the bones and viscera are frequent.

(3) *The Pepper Syndrome*—Neurocytomas (round cell sarcomas) of the adrenal were pointed out by Pepper (1901) as producing in infants the symptoms of rapidly enlarging abdominal tumor caused by diffuse nodular growths in the liver and adrenal. The adrenal may remain small, but the liver reaches enormous proportions. There is little tendency to local extension or metastases. The growth is rapidly fatal. Both the Hutchison and Pepper types of tumor are of medullary origin, and are peculiar to infancy and childhood.\*

#### DIAGNOSIS

With the clinical pictures of these three syndromes in mind the diagnosis of adrenal tumors from other conditions, as well as the differentiation between cortical and medullary tumors of the adrenal itself, is usually not difficult.

Other conditions which must be differentiated from adrenal tumors are kidney tumors, Wolffian body, mesenteric and pancreatic cysts, splenomegaly, polycystic kidneys, Addison's disease, pineal tumors, and enlargements of the liver which may be due to abscess, metastases, primary tumor, lues and certain blood diseases.

In infancy and childhood the vast majority of abdominal tumors are either renal or adrenal in origin. One in every 200 tumors of adults are of renal origin, whereas in infants and children the proportion is one in every five. Probably an even higher proportion of tumors in infancy and childhood are of adrenal origin. Such would seem to be the case if we analyze the statistics of D'Espine and Piso, who found in 393 tumors in children that 52 per cent involved the eye and orbital structures.

\* It must be borne in mind that these tumors do not always arise in the adrenal, but may be primary in the retina or the abdominal sympathetic. Boyd has recently reported some typical examples of these types in an article entitled, "Three Tumors Arising from Neuroblasts," published in *Arch. Surg.*, Vol. 12, p. 1031, May, 1926.

At the Great Ormond Street Hospital (London) tumors in children involving the orbit are considered practically pathognomonic of primary medullary malignancy of the adrenal.

Thus in children differentiation limits itself practically to renal and adrenal tumors. If a large mass, apparently due to an enlarged liver, is felt the evidence favors primary medullary tumor of the adrenal, but if the liver cannot be felt and a mass of large size is in the kidney region, it is very likely renal rather than adrenal. Unilateral exophthalmus, of course, rules out renal tumor in the vast majority of cases. The presence of a tumor mass in the flank with associated changes in the sexual sphere, and possibly hypertension, indicates cortical tumor of the adrenal. In the adult male without sexual changes the difficulty of differentiating renal and adrenal tumor is manifestly enhanced.

The information gained by a complete urological investigation is often of decided value in aiding to the sum total of positive findings and making a definite diagnosis. Characteristically, the pyelogram shows the kidney pushed downward with encroachment on the pelvis and upper calices, as illustrated in Fig. 1. An urological investigation is not only of value in diagnosis but also as regards treatment, because at operation it is often necessary to remove the kidney with the tumor mass, hence the importance of knowing the separate function of the two kidneys.

The unfortunate aspect of the diagnosis of adrenal tumors lies in the fact that with respect to medullary tumors our diagnostic criteria are based wholly on metastatic phenomena. It is rare that the primary tumor is discovered before metastasis has occurred, and, unlike cortical tumors, too little is known of the manifestations of medullary dysfunction to serve as the basis of an entity which would be of help in the earlier diagnosis of these tumors.

#### TREATMENT

The treatment of adrenal tumors is surgical and radiological. No statistics are available regarding deep x-ray treatment, but it should be tried where surgery is contraindicated. From the surgical point of view the prognosis is almost uniformly bad. This is due in large measure to the fact that diagnosis too often does not antedate the occurrence of metastasis. This is particularly true in medullary tumors in which diagnosis at present rests purely on metastatic phenomena. In thirty-six cases cited by Legueu, there were sixteen operative deaths and a rapid recurrence in eighteen. In fifteen the kidney had to be removed with the tumor mass. Occasional cures are reported in adults so that surgical interference is indicated, at least in cortical tumors, in the hope of obtaining an occasional cure. A cortical hypernephroma reported by Collett (1924) is to date the only one that has been successfully removed in a child. The patient was living and well two years after the operation, and she had lost most of her characteristics of virilism. At operation it is essential to determine, first, the presence of the opposite adrenal and, second, the fact that the disease is not bilateral.



Fig. 1 (Case 4)—Sketch of pyelograms in case of 3 months' old boy with medullary tumor of left adrenal. Note characteristic pressure defect of upper calyces and pelvis, and tortuosity of ureter, due to displacement of kidney downward by the tumor. This case exemplifies the feasibility of cystoscopy in infants of any age.

#### ANALYSIS OF CASES \*

Of nine cases recorded as adrenal tumors at the University of California Hospital only four were proved primary adrenal tumors.

Case 1 was a cortical tumor (hypernephroma) in a man of 57. There were no symptoms pointing to the adrenal except possibly a systolic blood pressure of 190. The clinical diagnosis was carcinoma of the cecum with metastasis to the liver. An attempt at operative removal was unsuccessful and the patient died shortly afterward.

Case 2 was a female, 38, who complained of pain in her right loin, weakness, amenorrhea of eight months' duration, and excessive growth of hair on face, chest, and legs beginning about fifteen months before entry. Examination showed remarkable general hirsutism with male type of hair distribution. The clitoris was hypertrophied; libido sexualis was practically nil. There was no pigmentation and the blood pressure was normal. An attempt at operative removal of a cortical adrenal tumor proved unsuccessful and the patient died the same day.

Case 3 was a Hutchison type of tumor of the

adrenal medulla in a female infant 17 months old. Two months before the mother had first noticed bulging of the left eye. On entry to the hospital left exophthalmus and a mass in the left side of the abdomen was noted. The patient died shortly after operative removal of the mass.

Case 4 was a medullary tumor (neurocytoma) of the Pepper type in a boy of 3 months. There had been a rapid abdominal enlargement first noticed by the mother only a week previously, for which the liver was mainly responsible. It was considered as probably on a syphilitic basis because of suggestive bone changes demonstrated in the x-ray and a paternal history of syphilis. Pyelography revealed a typical defect in the left kidney (Fig. 1). Autopsy proved the tumor to be neurocytoma arising from the adrenal medulla with extensive metastases to the liver.

Five other cases, though not proved primary tumors of the adrenal, illustrate certain features of diagnostic importance.

One was a typical Addisonian syndrome with pigmentation, asthenia and hypotension caused by a squamous cell carcinoma of the left renal pelvis with metastasis to the left adrenal. In two others, in whom there were metastases to both adrenals, there were no symptoms indicative of adrenal involvement. Another patient in whom the diagnosis was never confirmed the possibility of cortical hyperplasia was considered on the basis of obesity, hypertension, and asthenia in a young man of 23.

In conclusion may be mentioned an instance of a typical Pepper syndrome in a female infant of 15 months. Yet bilateral pyelography and surgical exploration of the right kidney were negative. I feel that either the left adrenal was involved by a small growth producing no defect in the pyelogram, or that the tumor was primary in the abdominal sympathetic, as in cases described by Boyd. Unfortunately postmortem confirmation was not possible in this case.

#### DISCUSSION

A. A. KUTZMANN, M. D. (1052 West Sixth Street, Los Angeles)—Doctor Gibson is to be highly commended on his contribution, and especially on the logical arrangement of the material. Everywhere, especially in textbooks, adrenal tumors have been considered inadequately, and for that reason little is known of them generally.

Successful study, diagnosis and treatment of adrenal tumors entails a knowledge of endocrinology as well as the use of urologic methods. The cortical part of the adrenal is intimately connected with various secondary sex characteristics while the medullary is chiefly the source of adrenalin. The adrenals furnish elements of the endocrine system. These points must be remembered by the urologist because his diagnosis will rest chiefly upon his powers of observation.

Any abdominal tumor in the young should always arouse suspicion as to a kidney tumor first and an adrenal tumor next. In adrenal tumors we are faced with the problem of a silent yet highly fatal disease. There are no signs or symptoms unless the tumor be cortical when we usually find disturbances in the young. The presence of an abdominal tumor may be accidentally found by the mother or discovered only after metastases have occurred to other parts of the body. The favorite site of the metastases is the orbital structures. As a rule there are no urinary symptoms, so that the purpose of any urologic study would be to localize the tumor as well as to determine the integrity of the urinary tract in the event of surgical treatment.

\* I am indebted to Drs. W. J. Kerr and H. C. Moffitt of the Department of Medicine, and W. P. Lucas of the Department of Pediatrics of the University of California Medical School for the privilege of reporting these cases.



We must remember that even in the highly malignant tumors of the infant kidney there may be no urinary disturbances, the presence of tumor being the initial sign followed by pain, general weakness, etc., with hematuria a rare occurrence. Therefore, since the majority of these tumors occur in children, every abdominal swelling should be considered as a malignant renal or adrenal tumor until proved otherwise. Very few adrenal tumors occur in adults.

We are concerned with several types of adrenal tumors: in the cortex the highly malignant carcinoma; in the medulla the neuroblastoma or neurocytoma. Of these the neurocytoma is the more important since it probably occurs the most frequently. Mixer in twenty-seven infant renal malignancies found five of this group. As the author has stated, the neurocytoma is of two types. It may occur as a very rapidly metastasizing and diffusely disseminated malignant process in which the primary adrenal growth may be readily overlooked because of its small size or relatively slow growth (Hutchison type). The second (Pepper's type), where the tumor locally grows to a large size without evidence of metastases and cannot always be differentiated from the "embryonic mixed tumor" of the infant kidney. It has been found that these neurocytomas (Hutchison type) metastasize much more freely than the "embryonic mixed tumor" of the kidney, to the flat bones, liver, retroperitoneal glands, lungs, and orbit, while the renal tumor tends to recur locally and invade the local retroperitoneal tissues (21 per cent metastasize—Watson).

I am glad that Gibson has omitted the term "hypernephroma," which has caused much confusion and dispute in the pathology of renal tumors, and used Ewing's classification. The so-called "hypernephromas" of the kidney are probably only types of carcinomas, while the cortical tumors of the adrenal may also justly be called carcinoma. We have no time to go into the relative arguments at this time except to state that the "hypernephromas," in spite of simulating the adrenal cell pattern, contain no adrenalin.

Let me emphasize the importance of early diagnosis because of the high degree of malignancy. The symptoms are so ill defined, except in cortical tumors, that in all obscure abdominal disturbances, unaccountable malaise or abdominal fullness, the kidney region should be very carefully palpated. If a tumor is felt, a complete urologic examination whenever feasible should be immediately undertaken and exploratory operation advised without delay. If resistance is noted in the absence of tumor, an x-ray with air inflation of the colon may be undertaken and an examination made under an anesthetic. It is of great importance to obtain relaxation in the palpation of deep tumors of the kidney region.

I should therefore like to emphasize the frequency of malignant tumors in the kidney regions of the infant, first the kidney, second, the adrenal; their insidiousness of onset, the necessity of as early recognition as possible, because of their great malignancy, tendency to recur and to metastasize and that only early surgical removal offers a chance of recovery.

MILEY B. WESSON, M.D. (1275 Flood Building, San Francisco)—This article is remarkable in that an erudite comprehensive study of one of the most confusing subjects in medicine has been condensed into a short paper with the elimination of perplexing terms so that it is easily understood and of diagnostic value to the general practitioner as well as the urologist. In children one out of five tumors are renal in origin. Emphasis is laid upon the fact that tumors of the adrenal gland are rarer than adrenal tumors of the kidney, and that pain occurs earlier than in ordinary renal tumors because of the rapid extension and pressure on the lumbar nerves. A child that shows any abnormal sexual development, an orbital tumor or a tumor of the liver should be considered as a case of adrenal malignancy until proved otherwise. A complete kidney investigation including cystoscopy, differential phthalein tests, and pyelograms is indicated in all such patients and the findings are almost of pathognomonic significance. However, since diagnosis is never made until metastases occur surgery offers little except an operative mortality. Deep therapy should be used in all cases independent of whether or not an operation is per-

formed. The possibilities and contraindications of deep therapy are not known. It is generally understood that powerful doses simultaneously to both adrenals will cause exodus. Dr. John Rehfish and I have demonstrated in four cases of seminoma of the testicle that this premise is false.

Any individual who has a rapid and enormous abdominal enlargement, or unilateral exophthalmus, or abnormal sexual alterations should be suspected of harboring an adrenal tumor and subjected immediately to pyelography.

WILLIAM E. STEVENS, M.D. (608 Flood Building, San Francisco)—An interesting case of tumor of the left adrenal gland came under my observation a few years ago, and was reported in the *Journal A. M. A.* This patient was followed through a prolonged illness and at necropsy the diagnosis of hypernephroma of the left suprarenal gland was confirmed.

In this case there seems to have been a definite connection between trauma and the development of the hypernephroma. An early diagnosis was rendered difficult by the appearance of symptoms so soon after the injury by the bleeding and hematoma found at the first operation, and because of the negative findings at the second operation. The patient's later symptoms, hypertension—the importance of which is emphasized by Gibson—pigmentation of the skin, tumor mass, weakness and gastrointestinal symptoms, were, of course, suggestive of a tumor of the suprarenal gland. An interesting feature was the brownish discoloration of the skin, although but one of the suprarenal glands was affected. Another unusual feature was the comparatively slow progress of the disease. The majority of suprarenal tumors progress rapidly after the first symptom has appeared. Adenocarcinoma is infrequent in such a young patient; the average age is 44 years.

Several years ago in the study of reports of seventy-four malignant tumors of the adrenal glands found in the literature, the following facts were elicited: Of seventy in whom sex was mentioned, forty-two males and twenty-eight females were affected. Thirty-four per cent occurred in infants or young children, 18 per cent in patients between 6 and 40 years of age, and 40 per cent in patients over 40 years old. Of sixty-seven in whom a definite age was given, the average age was 32½ years. The right suprarenal was involved in 41 per cent, the left in 45 per cent, and both suprarenals in 14 per cent. Metastases occurred early, and were unusually widespread. In this series of seventy-four cases the liver was involved in 27, the kidneys in 16, the lungs in 14, the skull (particularly the orbit, in Hutchison's type) in 11, the opposite suprarenal gland in 9, the peritoneum in 7, the brain in 5, the lymphatic glands, especially the aortic, bronchial and mesenteric glands in 14, the pancreas, heart, mediastinum and ribs in 3, the spleen, intestines and diaphragm in 2, and the ovary in one case.

The most common subjective symptom of which these patients complained, and the first to appear, was weakness. This was present in about 35 per cent of the foregoing patients, and was usually accompanied by loss of appetite and often by vomiting and diarrhea. Next to weakness, gastrointestinal disturbances and pain were the most common complaints, each occurring in about 20 per cent of the patients. The latter occurs when the tumor has attained sufficient size to exert pressure on the surrounding structures. Unlike that due to pathologic conditions of the kidney, the pain in suprarenal growths usually extends from the lumbar region upward toward the corresponding shoulder, and anteriorly across the abdomen.

The objective symptoms that were noted, in the order of their frequency:

1. A tumor mass, which could be palpated, occurred in 38 per cent of these patients. When the suprarenal growth has attained sufficient size the kidney is usually displaced downward and laterally, and it is often possible to feel it in this position. When the suprarenal tumor is large, the kidney may often be felt as a distinct prominence on its surface. Because of its high position behind the ribs, palpation fails to detect a small tumor.

2. Pigmentation occurred in 20 per cent of these patients.

3. Loss of weight occurred in 12 per cent of them.

4. Hematuria occurred in 9.5 per cent. The latter is much less common than in renal growths, a fact of significance in the differential diagnosis. When present it is thought to be due to congestion caused by pressure on the renal vein.

5. Elevation of temperature occurred in 8 per cent of the patients. It is thought to result from necrosis of the tumor.

6. Premature sex development, principally overgrowth of hair, occurred in 8 per cent.

7. Pus, albumin or casts in the urine occurred in 7 per cent. These findings, pointing toward pathologic changes in the kidney, tend to make diagnosis more difficult.

Doctor Gibson's suggestion regarding the advisability of a thorough investigation of the urinary tract in tumor of the upper abdomen is worthy of special emphasis and he is to be congratulated on his interesting and instructive paper.

H. LISSER, M. D. (Fitzhugh Building, San Francisco)—Cushing once stated, in connection with pituitary tumors, that "without the co-existence of a growth which is capable during life of elbowing itself into clinical prominence by crowding aside important adjoining structures, it is doubtful . . . whether either the syndrome of Marie and that of Frolich would ever have been suspected of its long secret alliance with an hypophyseal lesion." However, once it was known that these clinical entities—acromegaly, and dystrophia adiposo-genitalis—were endocrine diseases due to derangements of hypophyseal function, then further observation disclosed that these hormonal alterations could be caused by pituitary lesions other than tumor, or actually develop for many years without localizing neighborhood symptoms of either supra- or intrasellar tumor.

The situation with regard to adrenal tumors is in many respects very similar. Had it not been for the pathologist's discovery of adrenal cortical tumor it is doubtful whether we would be aware today that certain pseudo-hermaphrodites, precocious girls, and virilistic women were victims of cortical adrenal disease. Now it happens in the case of pituitary tumors that the small and bony character of the sella turcica is responsible for erosions from within and subsequent encroachment on the pituitary vicinity which provides localizing evidence attracting the physician's attention, whereas the relatively roomy and yielding abdominal cavity permits considerable growth in the case of an adrenal tumor before local symptoms of pain or pressure bulge upon the horizon. These latter circumstances necessitate familiarity with the syndromes reviewed by Gibson, if we are to recognize the presence of an adrenal tumor; and in the case of adrenal cortex lesions this implies an acquaintance with the remarkable and bizarre endocrine manifestations involving the primary and secondary characters of sex.

Although it has been my lot to study a considerable and varied endocrine material during the last ten years, I had never encountered a case of adrenal cortical tumor until I had the opportunity of being perhaps the first to diagnose and urge operation of the tumor of the right adrenal cortex cited by Gibson as his Case 2. The fatal outcome was none the less merciful, inasmuch as the tumor had already penetrated the inferior vena cava. As Gibson states, the prognosis is generally gloomy, but a favorable outcome from surgical intervention is now and then a possibility. Holmes reports such a fortunate and brilliant result: A young woman, aged 24, had been in excellent health, a handsome, well-built girl up to the age of 17, when menstruation, which had been normal from 13 on, ceased abruptly; abnormal and excessive growth of hair on chin, lips, cheeks, chest, abdomen and extremities, began at about 19 years of age; her well-developed breasts atrophied; her general configuration strongly suggested masculinity; the uterus atrophied and the clitoris became hypertrophied; psychical disturbances were manifested by loss of erotic feelings and lack of modesty. Occasional pain in the right side of the abdomen, and finally a swelling there led to operation; and a benign neoplasm, made up of practically normal cortical tissue, was removed. An astounding transformation occurred. The patient menstruated thirty-six days after the operation (after seven years' absence) and continued

to do so regularly up to the time of report (nine years after operation); the clitoris regressed to normal size; the breasts developed again; the abnormal hairiness began to fall out shortly after the operation and entirely disappeared; and her feminine contours were restored. This constitutes a most convincing example of the astonishing endocrine effects produced by hyperplasia of the adrenal cortex, together with the cure of the disease by removal of the cause.

In addition to stressing the importance of pyelography as a localizing maneuver, I would call attention to the value of cholecystography when the tumor happens to involve the right suprarenal; in Case 2 of Gibson's series, the gall bladder was well visualized, but the shadow was pushed mesialward and downward by the tumor mass; the patient had only vague symptoms pointing to the right side, but the displaced gall bladder shadow, together with the flattening and marked elongation of the right kidney pelvis, clinched the localization.

Doctor Gibson has performed a service by presenting this subject in condensed and simplified form. These tumors are indeed rare, but milder manifestations due to simple hyperplasia are not uncommon. We owe the possibility of recognizing the latter to the most striking cases of tumor, so ably described by Gibson.

DOCTOR GIBSON (closing)—The pathological relation between cortical tumors of the adrenal and "hypernephromas" is still problematical, and space does not permit its discussion. Opponents of the Grawitz theory have gone too far in eliminating adrenal rest as a source of kidney tumors. It is well established that adrenal rests do occur in the kidney, although rarely, and it seems very likely that they do occasionally undergo malignant changes, producing the so-called hypernephroma, or Grawitz tumor. However, the term should be restricted specifically according to the criteria laid down by Grawitz. Undoubtedly many tumors are wrongly called Grawitz tumors that arise from renal epithelium. In atypical cases of both varieties it may be impossible to differentiate positively. Why sexual alterations do not occur in Grawitz tumors is no more understood than the hypertension associated with tumors of the adrenal cortex, which contains no adrenalin.

Wesson has emphasized the rather hopeless prognosis of adrenal tumors. It is unfortunate that we cannot with our present knowledge diagnose medullary tumors before metastases have occurred. However, diagnosis can antedate metastasis in cortical tumors, and an occasional brilliant cure effected.

Stevens' case illustrates the lack of sexual changes in the adult male, which are a diagnostic help in females of all ages and in young males. The pigmentation and blood pressure of 175/120 were of diagnostic value in this case.

"Organization" and "efficiency" are favorite words in modern American life. I am not sure that we are as efficient as we pride ourselves on being, but there is no doubt that we are highly organized. Every morning the postman brings to me—and, of course, to thousands of other householders—appeals for the support of the Society for This or the Society for That. These numerous societies have formidable lists of officers, directors, and boards of advisers. The king pin, however, is generally a paid secretary whose business it is to collect money and discover objects for which the money may be spent. No doubt many of these organizations perform a useful service. Some of them, however—altogether too many, I fear—confirm the dictum of a genial cynic who said to me that "civilization is a scheme which the human race has taken great trouble to invent in order to make itself more trouble."—Lawrence F. Abbott, *Outlook*.

The physician regards himself as worthy of his hire, and almost all medical organizations nowadays establish a minimum charge schedule. But it is by no means a Medes and Persians' affair. His work is, after all, an avocation, and his skill and time are ever at the service of the poorer patient for a proportionately lower fee, just as faithfully as they are rendered the wealthy for a princely compensation.—Editorial, *Medical Standard*.

# A NEW FAMILY GROUP OF HEREDITARY AND SPASTIC ATAXIA—ITS DISTRIBUTION IN CALIFORNIA

## PRELIMINARY REPORT†

By H. C. NAFFZIGER, M. D.

AND

H. C. SHEPARDSON, M. D.

**T**HIS case is reported not only because of the interest the condition itself elicits—although the disease is of sufficient rarity to warrant its being recorded—but also because of the striking hereditary and familial aspect which has been uncovered since the patient first came under our observation.

In 1861 that form of spinal disease which has since borne his name was originally described by Friedrich. Since that time a large number of cases, either identical or quite similar, have been described in the literature, under various classifications which have been proposed to cover the several manifestations of the condition.

Though called hereditary ataxia the disease is usually sporadic rather than hereditary. In the great majority of the cases, however, the condition seems to be familial in that several members of the same family are affected.<sup>1</sup> Thus Schoenborn<sup>2</sup> found a family incidence in 114 of the 200 cases he analyzed, yet in a not inconsiderable number of the recorded cases the same disease occurred in the ascendants or in collateral lines, and therefore must be considered hereditary. Both the familial and hereditary aspects

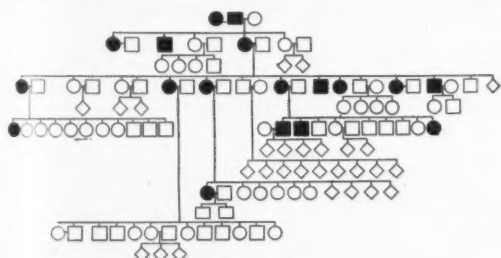


Fig. 1. Family Tree of Hereditary Ataxia—Reported in present article: Squares, males. Circles, females. Diamonds, unknown sex; individuals not as yet investigated. Black figures, individuals with ataxia.

Note—Eighteen cases in four generations.

are strikingly illustrated in the pedigree of the case now being presented.

## CASE REPORT

J. C. G., a white American male aged 37, first came under our observation in April, 1924, complaining of difficulty in walking together with some weakness of the legs and arms, and difficulty in speaking. His family first noticed the spasticity about five years previous to that time, and there since has been a gradual but progressive diminution in his ability to control volitional movement. The condition was complicated about three years ago by a fractured skull resulting from a blow on the head with an axe, a residual effect of which is a total blindness of the left eye.

Examination revealed an individual with a markedly spastic gait, drawing speech with slurring of his words, and horizontal and vertical nystagmus. Pyramidal tract involvement was indicated by greatly exaggerated deep

†Read in part before the Section on Neuropsychiatry of the Fifty-fourth Annual Meeting of the California Medical Association, Yosemite, California, May 18, 1925.

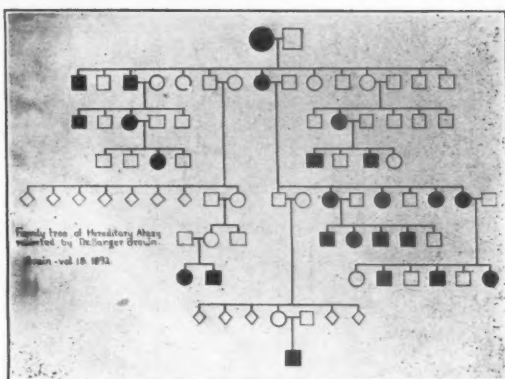


Fig. 2. Family Tree of Hereditary Ataxia—Reported by Sanger Brown, 1892—Square, males. Circles, females. Diamonds, unknown sex. Black figures, individuals with ataxia.

Note—Twenty-four cases in five generations.

reflexes and bilateral ankle clonus. No changes in sensation were elicited. Ataxia, asynergia and dysmetria were pronounced. He had a definite Romberg reaction. Mental changes were marked; judgment was greatly impaired and there were some delusions. Additional tests including Barany reactions indicated multiple lesions, chiefly on the right side, involving primarily the structures in the posterior fossa, principally cerebellar, but also involving other portions of the brain stem. Blood, urine, blood Wassermann and spinal fluid were all normal. A diagnosis of hereditary spastic ataxia was made.

Because of the interesting family history elicited from the patient, a special study—which is even now far from complete—was begun. This, as far as it has been investigated, is given in chart form which is self-explanatory. In a survey of the literature on the hereditary aspect of the disease we were somewhat surprised at the dearth of cases reported in which the genealogy had even been partially investigated. The most complete record that has been found is the classic study reported by Sanger Brown<sup>3</sup> in 1892 (also given in chart form for comparison) in which he found twenty-four cases in five generations. Other genealogical studies of interest have been made by Rutimeyer (1883), Nonne (1891), Brock (1893), Bayley (1897), Sprawson (1914), Reitter (1915), Grunewald (1920) and one or two others.

As Oppenheim states, however, abortive forms of Friedrich's disease may undoubtedly occur, while combinations of, and transition forms between, this disease and family spastic paraplegia, progressive muscular atrophy, etc., have been described. In fact, Bing<sup>4</sup> claims there is a close connection ("an unbroken chain" he calls it) between the various familial diseases such as hereditary cerebellar ataxia, family cerebral diplegia, family spastic paralysis and family lateral sclerosis, while Jendrassik<sup>5</sup> believes the number and variety of the types of hereditary diseases are great and that they pass one into the other and make any classification impossible. In his second contribution<sup>6</sup> he says that hereditary nervous diseases have an identical course within the same family, but vary greatly in different families.

It seems probable, therefore, that had it been possible to investigate more thoroughly the genealogy of the recorded cases, isolated symptoms, e. g., nys-



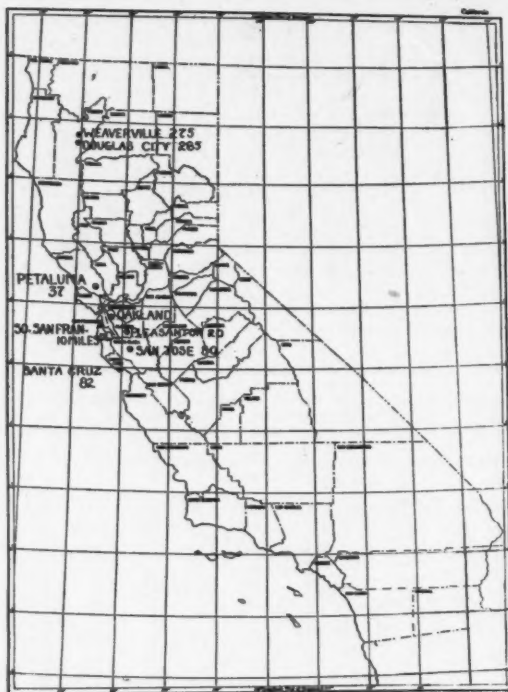


Fig. 3. Map of California showing distribution of family group herewith reported. The figures represent approximate mileage from San Francisco.

tagmus, absent knee and Achilles jerks, positive Babinski, Gordon and Oppenheim phenomena or possibly even some difficulty in walking, would have been discovered. Farnell<sup>7</sup> found such conditions in ten of thirty-seven members of a family one of which had a definite ataxia, and Menzel<sup>8</sup> reported a family in which the mother had tremor of the head and uncertain gait, and five of her seven children had evidence of nervous disease. Of these, two sisters and a brother were probably affected similarly to the case of spastic ataxia he reports.

In the family now being studied the patient's grandfather was ataxic. We are informed he had several sisters who were ataxic and that some of their children were ataxic. We have, however, included in the chart only one sister, as this is the only member of the generation to which the grandfather belonged that we are reasonably certain had the disease.

The patient's mother had the disease, having spent the last twelve years of her life in an invalid's chair. This woman had fourteen children, of whom our patient was one. Two died in infancy.

The remaining eleven, some of whom are married and have families of their own, are somewhat scattered throughout northern California. Figure 3 is an outline map showing the location of the cities in which the various members of the family reside, and the approximate distance from San Francisco. The patient is married, lives in Petaluma, and has two children, 8 and 11, both of whom are well. The other married members of the family are quite prolific, as will be noted from the chart, but with

three exceptions their children are well or the families have as yet not been completely investigated.

The first exception is the case of one sister who died several years ago. She was ataxic but had eleven children, one of which is dead. He may have been ataxic although of this we are as yet not certain. Nine of the children in this family are well; the tenth, a daughter who lives near Douglas City, Trinity County, is ataxic.

The second exception is another sister, also ataxic and who likewise died several years ago. There are nine children in her family, three of whom are ataxic. One of the ataxic sons is married and has four small babies.

The third of the sisters who now have children sufficiently old to manifest the disease, is one who, also ataxic, had ten children, four of whom died in infancy. At least one of the living children is ataxic.

The whereabouts and condition of the remaining members of the family, insofar as it is at present known to us, is shown on the chart (Figure 1). The family is scattered over quite a large territory in California, viz., Petaluma, San Jose, San Francisco, Pleasanton, Redwood City, Douglas City and Santa Cruz, and there may be other localities which will later have to be included for some of the members of the fourth generation who have not yet been investigated may have moved from the city in which their parents lived.

From the chart it will be noted that in the four generations there are at least eighteen cases of ataxia. After the present—third—generation is completely studied, we have outlined a plan whereby the members of the succeeding, or fourth, generation will each be heard from at least once a year, so that it is possible we will eventually be able to record further details in the transmission of the disease together with the complete geneology of the family.

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Official figures released by the United State Department of Commerce show a slight decrease in the death rate of mothers from childbirth for 1925 (6.5 per 1000); 6.4 in 1924; 6.7, 1921.

California mothers were lost from all puerperal causes at the rate of six per 1000 births in 1925; 5.9, 1924; and 6.8 in 1921. Deaths from what the statisticians call "puerperal septicemia" for the United States were 2.4 per 1000 births, 1925, which is about what the figures have been for five years. California mothers placed in this "deaths from puerperal septicemia" class were 2.3 per 1000 births for 1925, against 2.0 for 1924. Expressed another way, approximately one mother out of every 166 died of conditions incident to childbirth (presumably at term); in one of each 500, puerperal septicemia is given as the cause of death.

## CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

### CLINICAL THERMOMETER TIP IN BRONCHUS

By WALLACE BRUCE SMITH, M. D.

(From the Department of Otolaryngology, University of California Hospital)

The following case of foreign body in the bronchus is interesting from several aspects: its accidental discovery; its location in one of the very small bronchi, the x-ray showing it below the dome of the diaphragm; the patient's unusual operative history; and the manner of its acquisition, as it was either bitten or broken off and aspirated. The unreliability of the patient's statements make it impossible to determine when the accident occurred. Her experiences in several different hospitals make it impossible to check back with the nurses to discover the incident of the bitten or broken thermometer, or indeed that the accident did not occur in the patient's home.

Widow, 24 years, American. Admitted to hospital June 8, 1926.

#### Previous entries:

1. 11-30-25. External strabismus, pyelitis.
2. 2-8-26. Pelvic complaint.

#### Past operative procedures:

1. Appendectomy, Aet. 14.
2. Tonsillectomy, Aet. 14.
3. Suspension and puncture of ovarian cyst, Aet. 19.
4. Right salpingo-oophrectomy, Aet. 21.
5. Cholecystectomy, Aet. 23.
6. Correction of external strabismus, Aet. 24.
7. Panhysterectomy and left salpingo-oophrectomy, Aet. 24.

May 26, 1926—X-ray of chest. "There is a foreign body in the right lower lung field." (This was found during the routine examination, and not found as the

result of complaint by the patient nor as the result of any physical findings.)

May 27, 1926—X-ray (G. I. series). "In the right lower lung field" is a shadow of metallic density about 3 cm. in length."

C. C.—"Foreign body in lung." Afternoon temperature. Pain in midline above umbilicus after eating.

P. I.—Pain in abdomen one-half to one hour after eating. Relieved by soda or food. Dry cough during the last two months. Occasional itching sensation at the right lung base accompanying respiration. Afternoon temperature of 99 to 100 degrees F. since February, 1926.

P. E.—Chest—Expansion equal and symmetrical. Fremitus, normal. Resonance, good. Diaphragmatic excursion, 3.2 cm. on both sides, but is 2 cm. higher on the right side. Breath sounds are vesicular throughout. Whispered and spoken voice, well within the limits of normal. No rales heard.

June 11, 1926—X-ray of chest (stereo.). "The chest is negative except for a foreign body which lies in the posterior portion of the right lower lung field in the same position as when seen on May 26, 1926."

June 14, 1926—Hospital course: Patient is complaining of "night sweats."

June 19, 1926—Complaint of "night sweats" not verified by the nurses. Patient was apprehended wilfully falsifying her temperature by placing the thermometer against a hot water bag. Patient is subject to changing complaints.

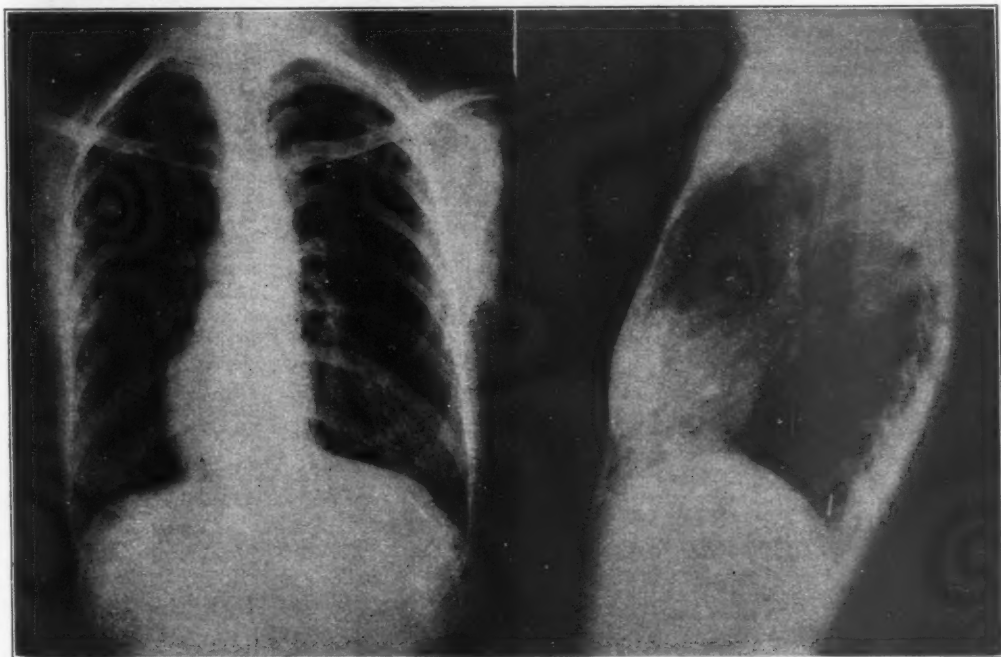
June 24, 1926—Morphin sulphate, gr.  $\frac{1}{4}$  and scopolamin, grs.  $\frac{1}{100}$  (H). To surgery one hour later. Larynx cocaineized. Patient put in left lateral recumbent position. No. 2 Bruning's bronchoscope used. Foreign body visualized in a tertiary bronchus and removed. It proved to be the mercury bulb of an ordinary thermometer.

June 26, 1926—Patient improved. Some pain in the right chest.

June 29, 1926—Discharged.

#### SUMMARY

1. The foreign body was accidentally found during the routine x-ray examination of the chest.
2. The presence of the foreign body caused no un-



toward symptoms which might attract attention to its presence.

3. Is definitely known that the foreign body resided in the bronchus for thirty days (May 26 to June 24).

4. There was no inflammatory reaction about the foreign body.

5. The patient denied all knowledge of time or place in regard to the aspiration of the thermometer tip.

## THE SWALLOWING OF A FULL-SIZED TOOTHBRUSH

REPORT OF A CASE FROM THE LOS ANGELES  
GENERAL HOSPITAL

By CLARENCE A. JOHNSON \*

This case is reported because of the unusual accident. On June 14, 1926, Mr. A. F., 49 years, entered the Los Angeles General Hospital with a letter from a police surgeon relating that "the bearer swallowed a toothbrush, and being unable to obtain the proper equipment for its removal, I am sending the man to you."

The patient gave a history of having swallowed a toothbrush a few hours before, stating that while he was scrubbing his "tonsils" with the toothbrush, it slipped from his grasp and was swallowed. According to the patient, "several doctors attempted to remove this foreign body but were unable to do so."

The patient gives a history of considerable pain in the throat and under the sternum for about three hours after this accident, after which he described an epigastric distress and burning which lasted one and one-half hours.

Fluoroscopic examination soon after his entrance to the hospital showed no obstruction in the esophagus, or the presence of a foreign body in the gastrointestinal tract.

I saw this patient about four hours after he had swallowed the toothbrush, and suggested that the esophagoscope be used, but none was obtainable at that time. I then accompanied the patient to the fluoroscopic room where I observed the barium pass through the esophagus into the stomach without any apparent obstruction.

The patient's right leg had been amputated just above the knee, and the fourth and fifth fingers of the left hand were also missing which, together with the type of patient, led me to suspect that possibly the act had wilfully been committed in order to secure hospitalization, or that he had not even swallowed a toothbrush. However, his discomfort in stomach and some dyspnea was convincing to me that there was a foreign body in the upper gastrointestinal tract.

There was nothing in the physical findings of any interest excepting a slight distress in the abdomen and some tenderness in the region of the pylorus about six hours after the swallowing of the brush.

After several consultations during the next two or three days, with suggestions from catharsis to dough, and other coarse foods, barium was administered with the hope that some of the meal might find lodgment in the meshes of the brush and thus be revealed in an x-ray picture; but at no time was there a shadow of any foreign substance.

On June 21 operation was performed, with the following report: "A midline incision slightly to the left and

above the umbilicus was made; after opening the peritoneum and packing off the intestine, the stomach was brought up and the handle of the toothbrush was readily palpable, with the bristle end fast in the pylorus. A chromic suture was purse-stringed into the stomach on its outer margin five inches from the pylorus, and a small incision made sufficient to bring the handle through, and slightly enlarged to allow the bristle end to be drawn out. After the toothbrush was removed by forceps, the purse-string was drawn and the edges inverted by a second layer of Lembert suture, and the abdomen closed without drainage."

The pathologist reported the specimen to be a toothbrush with a handle 15½ centimeters in length. The patient made an uneventful recovery, and was discharged from the hospital on the nineteenth postoperative day.

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## ABSORPTION OF SUBCUTANEOUS FAT DEPOSITS AT SITE OF REPEATED INSULIN INJECTIONS

REPORT OF CASE

By ROLAND A. DAVISON \*

Major, Medical Corps, United States Army; Medical  
Service, Letterman General Hospital,  
San Francisco

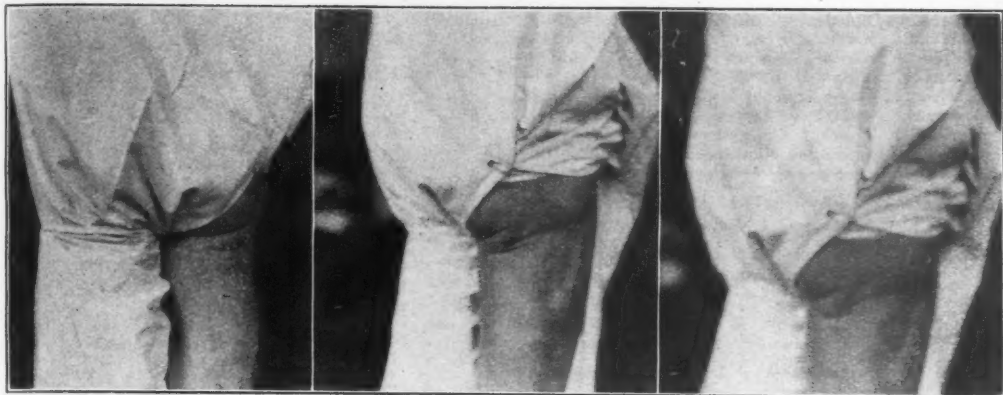
SINCE the introduction of insulin for use in treatment of diabetes mellitus, numerous workers have reported sensitization phenomena, including urticarial wheals and indurations at the site of subcutaneous injections, serum sickness, and general anaphylactic symptoms. Williams,<sup>1</sup> Geyelin,<sup>2</sup> Wilder,<sup>3</sup> Gibson and Larimer,<sup>4</sup> Raynaud and La Croix,<sup>5</sup>

Joslin,<sup>6</sup> Lawrence,<sup>7</sup> and Campbell<sup>8</sup> describe the

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\* Roland A. Davison (Letterman General Hospital, San Francisco). M. D. Long Island College Hospital, Brooklyn, N. Y., 1914. Graduate, Army Medical School, Washington, D. C., 1920. Graduate study; Intern, Long Island College Hospital, 1913-16; research associate, Trudeneu Sanatorium, N. Y., 1916; assistant resident and instructor in Internal Medicine, L. I. C. H., 1917; entered military service as Lieutenant M. C., July, 1917. Present hospital connections: Chief, Division of Gastroenterology and Metabolism, Letterman General Hospital, San Francisco. Scientific organizations: Fellow, A. M. A. Present appointments: Major, Medical Corps, U. S. Army. Practices limited to Medicine since 1919.





Patient standing

technique of insulin administrations and comment on these sensitization phenomena and their possible causation.

The reaction of the patient here reported differs from any other so far reported, and illustrates a possibility which may be encountered where there is repeated injection of insulin into a given area.

Mrs. H. C., age 37, entered the hospital March 17, 1925. Her father, who is living at 70, has diabetes. She has had no previous illness to which her diabetes could be traced. The onset of the present illness occurred three months before admission. The chief complaints were loss of ten pounds weight, fatigue, and a gradually increasing thirst. She had no abnormal food desires nor excessive appetite. She had never used starch or sugar to excess. The diagnosis of diabetes had been made ten days before her admission to the hospital.

Physical examination showed a soft cystic thyroid with slight enlargement, otherwise there was nothing remarkable and the patient's general condition was excellent. Weight, 59 kilograms; height, 165 centimeters. Urine contained 7 per cent glucose. The blood sugar on the following day was 0.307 per cent. Blood count, normal; and blood Wassermann, negative.

She was placed on a trial diet of 50 gms. carbohydrates, 65 gms. protein, and 125 gms. fat. On this diet the urine became sugar-free, but the blood sugar remained between 0.160 per cent and 0.182 per cent, therefore the administration of 5 units of insulin twice daily was instituted. The insulin was injected hypodermically in the usual manner. Sterilization of the syringe was accomplished by the use of alcohol.

The patient complained of pain, burning and itching at the site of the insulin injections at the time injected. In twenty-four to thirty hours following the injections, there appeared at the site a circular indurated area sur-

rounded by an area of erythema which gradually increased in size to a diameter of 10-12 centimeters over a period of three to four days, and then gradually subsided. Itching and burning continued during this period. The size of the local erythematous area depended in no way on the amount of insulin injected. The patient's constitutional reaction to insulin was also atypical, showing evidence of deficient absorption. She would seemingly get no effect from each of several injections, and then would show a hypoglycemic reaction at an unexpected time.

Attempts were made to determine the cause of the local phenomena. No reaction was observed to follow the subcutaneous injection of water, normal salt solution or one-half per cent Tricresol solution. Pronounced reactions occurred following the injection of 1-100, 1-50 and 1-25 dilutions of insulin. (Both Stearns and Lilly products were used.) The low protein insulin of Squibb was then tried with similar results. Attempts to desensitize the patient were unsuccessful.

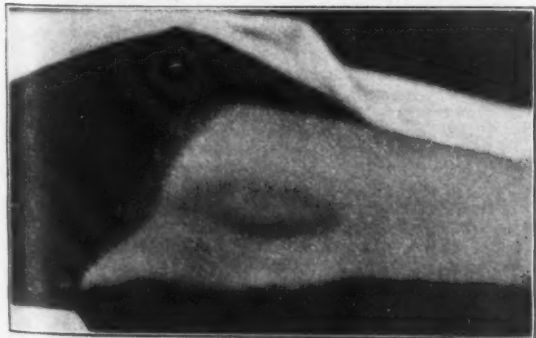
She was discharged from the hospital May 30, 1925, with instructions to take a diet of 50 gms. protein, 60 gms. carbohydrates and 165 gms. fat, which she tolerated without the use of insulin. For about four months she remained very well and then began to lose tolerance.

She was readmitted to the hospital November 1, 1925, greatly dehydrated and in a precoma state. On admission the urine contained acetone and 3 per cent sugar. Blood chemistry: sugar, 0.364 per cent; carbon dioxide combining power, 9.9 volumes per cent; urea nitrogen, 0.014 per cent; total chlorides, 0.313 per cent.

Because of the seriousness of her condition the use of insulin was deemed essential to her recovery and in full knowledge of the patient's previous reaction, its use was begun. Local reactions similar to those observed during the first admission were again seen, but after a very few injections the patient's local reaction to insulin became similar to that observed in the usual case of diabetes, and no further local phenomena were observed during her period of hospitalization. The patient was freed quickly of her acidosis and then the diet was adjusted to her caloric needs. Insulin was given in doses averaging 60 units daily, one injection before each meal. U-40 insulin was used throughout.

She left the hospital January 12, 1926, in excellent condition with advice to continue the diet of 50 gms. protein, 55 gms. carbohydrates, and 155 gms. fat. On this diet she was able to carry on her usual household and social duties and increased her weight from 50 kilograms to 55 kilograms. This diet necessitated the use of three daily injections of insulin which the patient injected herself, following the directions given her.

All of the injections, however, were made into the outer aspects of both thighs, U-40 insulin being used. Injections were accompanied by slight temporary pain, but no other untoward effects until after a period of about four months, when the patient began to notice a pulling of the skin with loss of subcutaneous fat in the areas into



Patient recumbent on flat table

which she made the injections. The accompanying illustrations show the extent of local fat absorption or atrophy which has occurred. When first observed the skin appeared to be adherent to the underlying fascia, but when the patient no longer injected insulin into the areas the skin seemed to loosen and be free.

Although it is now two months since the patient was instructed to inject no more insulin into these areas, there has been no evident deposit of fat.

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### FATTY ATROPHY FROM INJECTIONS OF INSULIN

By STANLEY H. MENTZER AND ERNEST S. DUBRAY\*  
(From the Department of Surgery, University of California Medical School)

IN THE November 13, 1926, issue of the *Journal of the American Medical Association* Clifford J. Barborka reported two cases of fatty atrophy resulting from insulin injections. These were the first cases on record.

We would like to report a third case observed in the Out-Patient Clinic of the University of California Hospitals. It is our first experience of atrophy following insulin injections; however, several similar atrophies have been observed in narcotic addicts.

#### REPORT OF CASE

A woman, aged 54, was first seen February 7, 1925. The patient had had severe tonsillitis in childhood, acute rheumatic fever with involvement of most of her joints at the age of 20, and diphtheria at 25. An appendectomy and pan-hysterectomy had been performed at 30. A right sciatica had been intermittently present for six years and had been relieved by a body cast. The patient had known of her diabetes for six years. The blood sugar on admittance was .119 per cent and varied from .25 to .13

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Ernest S. duBray (1255 Flood Building, San Francisco). M. D. Johns Hopkins Medical School, 1914; B. A. University of Cincinnati. Previous honors: Captain A. E. F. (World War); consultant (Med.) Veterans' Bureau, 1923. Present hospital connections: Visiting physician, University of California Medical O. P. D. (Metabolic Division). Scientific organizations: American College of Physicians, Academy of Medicine of San Francisco, San Francisco County Medical Society, C. M. A., A. M. A. Practice limited to Medicine since 1919. Publications: Eleven articles, mostly on metabolic diseases, appearing since 1920 in the following journals: *Arch. Int. Med.*, *Am. J. M. Sc.*, *California and West. Med.*, *J. Lab. and Clin. Med.*



per cent in May, 1924, when she began taking insulin elsewhere. The patient was given no instructions and no warnings about the administration of hypodermic solutions.

Eight months later she returned to our clinic. Her blood sugar was .218 per cent. Fifteen units of insulin were taken hypodermically by the patient daily, and in November, 1926, she was sent to the surgical clinic complaining of a "lump" on her left thigh and depressed areas on the left thigh and left arm. A small calcified node 1 cm. in diameter was removed under local anesthesia from the left thigh, immediately cephalad to the depressed area. The pathologist stated it was a calcified cyst. The depressed area on the left thigh measured 6 by 9 cms. and on the left arm 3 by 4.5 cms. These were the sites of the hypodermic administration of insulin, and had been present for four and eight months respectively. There were no neurologic changes in the overlying skin, no deep tenderness and no muscle changes; apparently fat atrophy was the only disturbance. The skin was adherent to the underlying fascia. Sections taken from the depressed areas showed no lymphocytic foci indicative of inflammatory changes. On the other hand, sections from similar depressed areas at the hypodermic sites in narcotic patients invariably showed foci of lymphocytes and even polymorphonuclears. The latter were obviously cases of atrophy of inflammatory origin, whereas the former showed no inflammatory changes.

With unusual foresight there has been of late some special consideration given to the needs of health preservation of the elderly person, as though humankind were living to a more advanced age and were, hence, in need of such specialized medical attention. We hear much these days about the lengthening of the span of life, but, while it is true that more people live longer than formerly, the maximum years of the individual are not greater, even if a few more persons do attain to three score and ten years or so. We do not need to prepare to preserve centenarians, though it is well if we can make the later years of the many who now attain anywhere on the postmeridian side of life, happier.—*M. J. and Record.*

## - BEDSIDE MEDICINE FOR BEDSIDE DOCTORS -

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects and discussants invited. Useful extracts from letters will be published.

### WHAT ARE THE ESSENTIAL INDICATIONS CAESAREAN SECTION?

**The Editor:** While this discussion reveals some differences of opinion, all discussants agree that too many Caesarean sections are being performed. To discuss the why's of this would lead us too far afield, but whatever they are, they need to be seriously reviewed by obstetricians with a view to reformation of procedure.

The serious after consequences of the one time popular ventral fixation of the uterus during childbearing years doubtless has ceased to be the problem it once was to obstetricians, for which we may all be thankful.

"Bedside Medicine for Bedside Doctors" entails an enormous amount of correspondence and tireless effort. This is immaterial if the discussions are valuable. The only method we have of determining this point is by communications from readers. Please send us a note or postcard telling us your opinion of these discussions, and if you believe they should be continued, suggest topics for future discussions.

**Alice F. Maxwell\***—Caesarean section as an obstetrical procedure has passed the test of time and occupies a definite and well-defined position. The operation, however, necessitates an invasion of the abdominal cavity, and it is subjected to the same laws or risk and mortality which follow in the wake of laparotomies in general, and which, of course, is higher than that which attends childbirth by the natural passages. If to this inherent surgical mortality is added the risk of operation on infected or potentially infected individuals, the procedure "becomes one of the most fatal in surgery" (Newell). The ease with which a section can be performed constitutes one of its disadvantages, since it leads to its abuse, for the danger to the mother in improperly selected cases is not balanced against the method as an easy exitus from an obstetrical complication. Caesarean section should be performed only in the interests of the mother and a living child, therefore a dead or toxic baby or an infected woman are contraindications for its employment.

**Absolute Indication for Caesarean Section**—Pelvic obstruction of such a degree that delivery of a living child per vaginam is impossible is the only absolute indication for section. Such degrees of contraction are very unusual. Moreover, statistics from large clinics indicate that 80 per cent of labors with contracted pelvis are spontaneous. In the Woman's Clinic of the University of California Hospital in 5500 labors there were 4 per cent contracted pelvis. Thirty-five patients were delivered by caesarean section. However, it is evident that every instance of disproportion between the fetus and the mother's pelvis must be individualized and the management must be determined by attending circumstances.

**Relative Indications for Caesarean Section**—Rela-

tive indications for section are varied and depend largely upon the experience and judgment of the attendant and especially upon various modifying factors such as the age of the patient, rigidity of cervix, condition of fetus and unfavorable presentations. In general, conservatism will meet the best interests of the mother in the large majority of obstetrical complications.

In the treatment of eclampsia and allied toxemias of pregnancy it has been repeatedly shown by statistics from representative institutions that eliminative measures in conjunction with morphin for the control of convulsions will be followed by less shock and danger to the mother than will surgical procedures, or accouchement forcé. In these instances the baby is usually below par, frequently profoundly toxic, and may be stillborn or survive delivery but a short period. Moreover, the operative trauma to the mother may be just enough to unfavorably influence the prognosis in the intoxication of the pregnant woman.

Hemorrhage in pregnancy, whether from placenta previa or premature separation of a normally implanted placenta, rarely demands section and, again, a large number of statistics serve to emphasize the advantages of tamponades, induction of labor, or conservatisms with delivery through the natural passage rather than surgical interference. In rare instances with concealed hemorrhage from ablatio placenta, the symptoms may be acute and the life of the mother depends upon immediate control of the bleeding. Here laparotomy is imperative even though the baby is dead. In these alarming hemorrhages, due to the infiltration of the uterine musculature by blood, the power of contractibility of the uterine musculature may be entirely lost so that, after removal of the placenta, hysterectomy may be frequently necessary to control the bleeding.

In acute respiratory disease or other generalized infections the strain upon the mother is apparent in the second stage of labor. This can always be avoided if after the cervix is effaced the labor is terminated with forceps or version. By Gwathmey anesthesia the woman can be comfortably and safely carried through the first and second stages. With such complications, it is improbable that the mother's condition will warrant a section. The above statements hold true for the treatment of pregnant women with pathological conditions of the heart.

In recent years there has been considerable discussion as to the advantages of extraperitoneal or transperitoneal section rather than the older intraperitoneal route in women frankly or potentially infected after the "test of labor," or as the result of neglected labor. To my mind, the question hinges largely upon the relative degree of resistance of the peritoneum and the subperitoneal cellular tissue around the base of the broad ligament. Disregard-

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ing the greater technical difficulties of the extra or transperitoneal route as a method of delivery, the fact remains that we must bear in mind that the uterus undergoing involution is handicapped by an incision in its walls. In the presence of an intra-uterine infection this handicap is tremendously increased and the infection is very likely to spread to the surrounding tissues. We know that the peritoneum is able to handle, wall off, and protect the individual from a certain amount of infection; the resistance of the individual and the amount of infection are the determining factors in the outcome. In individuals exhausted by long labor or attempts at operative delivery, the low cervical or extra peritoneal section is not an ideal method of delivery because of the inevitable contamination of the cellular tissue around the incision by the spill and because of the possibility that such a cellulitis by continuity may spread to areas remote from the pelvis. In recent publications the most ardent advocates of the trans- and experitoneal routes are sounding just this warning.

**W. O. Henry \***—Let me say, to begin with, that I think this a most timely and practical question to occupy our thought and attention, for while caesarean section is a well-recognized and proper procedure when required, still I think it is done many times when simple means would have given equally good or better results, and I am sure it is done too often by the inexperienced to the detriment of mother or child or both.

About the only essential indications for caesarean section are pelvic obstruction to the delivery of a living child; or a dead mother with a living child undelivered, as I know of at least one case of the latter variety when the obstetrician by quick action saved a living child which grew to a fine girlhood. But it cannot be too strongly emphasized that this is a major operation in a living woman and should not be lightly undertaken, nor done until all minor procedures have been shown to be inefficient.

**E. T. Rulison \***—The essential indications for caesarean section may be enumerated as follows:

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\* **Elbert Theodore Rulison** (California State Life Building, Sacramento, California). M. D. Cornell University, 1909; B. S. Union College, Schenectady, New York, 1904. **Graduate study:** Intern Surgery and Pathology, Roosevelt Hospital, New York City, 1909-11; Intern Sloane Maternity, New York City, 1911. **Practice limited to Surgery and Obstetrics since 1925.** **Hospital connections:** Treasurer and member Board of Directors, and chairman Executive Committee of the General Staff of the Sutter Hospital, Sacramento. **Previous honors and services:** Sigma Xi Union College, 1904; Instructor in Surgery, College Physicians and Surgeons, Columbia University; assistant attending surgeon Presbyterian Hospital, New York City, 1917-18. **Scientific organizations:** Sacramento County Society for Medical Improvement, California Academy of Medicine, California Medical Association, and A. M. A. **Publications:** "Drainage in Appendicitis," *Ann. Surg.*, 1919; "A New Method of Demonstrating the Capsules of Bacteria," *Path. Lab. of Roosevelt Hospital*; "The Clinical Application of the Carrel-Dakin Method to Cases of Acute Appendicitis Requiring Drainage," *Surg. Gynec. and Obst.*, 1920; "The Study of the Parathyroid Glands in Man," *Anat. Record* III, 1909.

1. Previous caesarean section.
2. Contracted pelvis. With average-sized fetus it is justifiable to proceed without the test of labor if true conjugate is less than 8.5 cm. (simple flat pelvis) 9 cm. in justo-minor or if transverse diameter of outlet is less than 7 cm.
3. Placenta praevia only in primiparas with long, rigid cervixes and excessive hemorrhage.
4. Certain cases of ablatio placenta.
5. Exhaustion in elderly primipara with rigid os, uterine inertia, and oversized fetus.
6. Obstructing tumors and congenital malformations of uterus.
7. Carcinoma of the cervix.
8. Vagino or ventrofixation of uterus.
9. Threatened rupture of uterus.
10. Mother dying or dead.
11. Certain abnormal positions of fetus, e. g., persistent mentoposterior or persistent shoulder.
12. Oversized monsters.

I have never recommended caesareans in any of the following conditions, although one may imagine very rare instances in which it might seem justifiable to do so:

1. Toxemia of pregnancy.
2. Generalized infection, e. g., influenza, typhoid, or pneumonia.
3. Cardiac lesion.

It is very well to point out the danger of any type of caesarean in the infected mother with viable fetus, but the fact remains that these cases occur repeatedly and must be dealt with in a manner that gives the baby a fair chance. To my mind, the low cervical, transperitoneal operation appears to be the best procedure.

**Edith S. Brownsill \***—If we give unqualified credence to statistics compiled grossly from the results of caesarean section, our conclusions may be erroneous.

In tabulating the fatalities of all obstetrical procedures, are not all those cases included that are brought into the hospitals in an almost moribund condition as a result of ignorance or neglect of those in charge of the cases? These unselected statistics may influence the judgment in the management of doubtful cases.

I wish to speak of caesarean section in relation to the toxemia of pregnancy. The popularity which the elimination treatment has attained is not justifiable as far as the interests of the baby is concerned. We frequently eliminate the baby by prolonging the eliminative procedure. During the progress, if the baby's heart shows signs of grave distress from the toxemia, I think caesarean section should be resorted to at once. If the patient's condition should grow rapidly worse the strain of a labor should not

\* **Edith S. Brownsill** (deceased). M. D. University of California, 1904; B. L. University of California, 1899. **Graduate study:** Intern Children's Hospital, San Francisco, 1904-5; Johns Hopkins three months, 1917; Lying-In Hospital, New York, one month, 1917. **Practice limited to Obstetrics and Infant Feeding since 1922.** **Previous honors and services:** Berkeley Dispensary General Medicine, 1906-22; chief of Obstetrics, 1922-26; lecturer in Obstetrics at Alta Bates Sanitarium, 1910-25; lecturer in Hygiene, University of California, 1908. **Appointments:** Chief of Obstetrics, Berkeley Dispensary; chief of Birth Control Service, Berkeley Dispensary.

be imposed upon her. Caesarean section would put an end to further development of toxins, resulting in conservation of the mother's tissues and the exemption of the baby from further toxemia.

Given a pelvis that is not hopelessly deformed or occluded by tumors, accurate diagnosis and careful guidance will, in the majority of cases, allow of such procedure as to obviate the necessity of caesarean section. It is amazing what can be accomplished by a trial of labor in many cases where the pelvic measurements would seem prohibitive.

As has been emphasized many times, and justly so, caesarean section should be in the hands of a competent specialist if the future health of the mother as well as the immediate safety is to be ensured.

**Walter F. Wiese** \*—I do not know of any procedure in the practice of obstetrics which is of more value, and also, no procedure which is more abused than caesarean section. The critics wonder and question, "Why so many caesarean sections?" This, of course, brings to the mind of the physician the question, "What are the essential indications for caesarean section?"

**The Absolute Indication for Caesarean Section**—Any gross disproportionment between the passage and the passenger to the extent that it becomes an impossibility to deliver a living fetus through the vaginal route is the only absolute indication. Such conditions naturally are rare, and if the caesarean sections done were for this indication alone we would find few being done today.

**Relative Indication for Caesarean Section**—It is in this group of indications that we are all most prone to err, and we must be cautious, guarded and openminded in passing judgment on this group of indications. Each case deserves individual consideration from several points of view, such as age of the patient, the number and kind of examinations made (whether rectal or vaginal), the desire of a living child on the part of the parents, the general condition of the mother (whether she is exhausted or in shock), the condition and presentation of the fetus, and whether the patient is a primipara or multipara.

There is no question but that a dead fetus would be an absolute contraindication in this group.

A relatively contracted pelvis alone, or a relatively contracted pelvis with other complications, such as vaginal scars, healed fistulae, rigid cervix, atresia of cervix or vagina, large baby, fibroids of uterus, ovarian or other pelvic tumors, malignancies of pelvic organs, and prolapsed cord with living fetus and a malposition may all be considered as indications.

A previous caesarean section is without question an indication, and this brings up the question of sterilization of the patient. I cannot think of a single instance when sterilization is indicated with the first caesarean.

The toxemias of pregnancy are, I think, best taken care of in a conservative manner, but the obstetrician must remember that a living child is

the most wonderful gift to a mother, and the question of sacrificing the child must be carefully considered. The same considerations hold true with regard to placenta praevia. Conservatism is good practice, but the baby is often sacrificed when a caesarean section would give a good result for both mother and baby.

In ablatio-placenta we usually find a dead baby, and the surgical risk of a caesarean is too great. There may be a very few instances where a caesarean followed by a hysterectomy might be indicated to control the bleeding.

In pulmonary disease without other complications, I do not think a caesarean section indicated.

In heart complications the obstetrician must be guided by the patient's general condition as well as the individual characteristics of this particular labor. Usually the conservative method of delivery through the normal passage is the best method.

Let me emphasize the moral obligation of the obstetrician to his patient in these considerations of relative indications, and I am sure the critics will have no cause for alarm.

**W. J. Blevins** \*—This subject is of extreme interest to me in that we have been going through a reactionary period at the Woodland Clinic in regard to caesarean section.

Until rather recently any patient whose blood pressure became high, whose urine showed considerable albumin, who had edema and, in general, presented the picture of status eclampticus, was subjected to rest in bed and dietary régime, and if after twenty-four or forty-eight hours, as the case warranted, there was no improvement and convulsions still seemed imminent caesarean section was done.

In accumulating our yearly statistics we noted a high percentage of this operation as compared with other institutions handling an equal volume of work. It is true that in our entire series we lost but one patient and one child from toxemia, this patient entering moribund and dying within two hours after entrance to the hospital, the baby having been dead for some time.

However, hysterotomy is at all times a major operation and has a certain mortality and morbidity attached to it. Hence we desired to limit this operation as much as possible.

Since the adoption of more conservative methods we have reduced our operative interference in toxemia to almost nil, it being the last step in our régime.

It is true that there are other indications for caesarean section, such as disproportion between size of the child and the size of the pelvis, placenta praevia, uterine tumors, threatened rupture, dead mother and certain abnormal positions of the fetus. These, along with other conditions which may be seen from time to time, must be handled according to the judgment of the obstetrician, who must use

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\* **William J. Blevins** (Woodland, California). M. D. Barnes Medical College, Missouri, 1898. Graduate study: New York Postgraduate School, 1912. Previous honors: Lieutenant, senior grade, U. S. Navy, 1918-19; Practice: General until 1920. Present hospital connections: Obstetrician, Woodland Clinic, Woodland, California. Scientific organizations: California Medical Association and American Medical Association. Practice limited to Obstetrics since 1923.

that procedure which seems to promise the best results for mother and child.

We have a strict ruling that no caesarean section can be performed on any patient without consultation by at least two staff members, and I believe that if this ruling were more general we would find the necessity of caesarean section not as great as statistics would indicate.

However, it is an operation which, if performed by a competent surgeon, carries with it little risk and may relieve an extremely dangerous condition.

**Edgar Brigham\*—Absolute Indications for Caesarean Section**—The absolute indications for caesarean section such as extremely contracted pelvis, either inlet or outlet, or both; tumors blocking the birth canal; hydrocephalus, and monsters, are met without any great difficulty or concern on the part of the obstetrician. If he has been careful in taking the measurements and making examinations he is prepared to do this operation at the proper time.

**Relative Indications for Caesarean Section**—It is the borderline case that requires the best of judgment in determining what procedure is best for mother and child. In abnormal positions such as shoulder presentation, mento-posterior positions, and occipito-posterior with a conjugata vera of 8.5 cm. or an external conjugate of 16 cm. the safest procedure is caesarean section in the first stage of labor. The obstetrician may, however, apply the test of labor in selected cases in this group.

1. He may induce premature labor.

2. Young primipara with a soft cervix and with a pelvis which promises to yield under the strain of labor.

3. The fetal head is small and yielding.

The majority of patients in this selected class will be delivered via pars naturales, either unaided or assisted by forceps.

**Emergency Indications for Caesarean Section**—I want to speak of a class of indications which are not essential, but which to my mind are indications in emergencies which arise in the obstetrics of the general practitioner. Occasionally we are called to see a patient for the first time who is possibly in the sixth to ninth month of pregnancy and having a convulsion. We examine the urine and find we have a severe case of eclampsia. What shall be done? I believe that if there is still a rigid cervix and the mother's condition will permit, caesarean section offers the speediest and surest relief. Caesarean done under such circumstances does not call for caesarean at the next delivery. I have delivered one woman twice normally after a caesarean by another physician, and another, once, after a previous caesarean by myself. It is important in these cases, however, to control the pains and if necessary use forceps to prevent too great a strain on the uterus.

Occasionally it is necessary to disregard some of the contraindications, such as repeated examinations, previous use of forceps, and even active infection.

In these cases, which fortunately are rare, I believe there is much less danger of infection extending to the peritoneum if the tubes are ligated.

**C. B. Cortright\***—As is noted in textbooks, there are two indications for performing a caesarean section, namely, absolute and relative. Tersely said, "the indication for a section is a marked disproportion between the size and shape of the passenger and the size and shape of the passage."

There are no measurements that can absolutely guide us. For instance, we cannot expect to deliver a ten-pound fetus through a relatively small pelvis with a true conjugate diameter of  $7\frac{1}{2}$  cm. or less, nor would we be justified in doing a version or a craniotomy on a supposedly healthy viable fetus. Of course one is supposed to take into consideration a former bad obstetrical history, all of the measurements of the pelvis and the fetus, the number of vaginal examinations, and the general condition of both the patient and fetus before deciding to perform a caesarean.

A consultation should be had, and if caesarean is decided upon only a properly equipped operating room is the place to perform it.

Another classification might be, as follows:

**Uterine**—Rigid cervix, particularly in elderly primipara, originally so or, following a severe repair or amputation of the cervix, malignancy or a tumor in the pelvis that cannot be displaced.

**Pelvic**—Any greatly misshapen pelvis such as the kyphotic, flat, osteomalacic, Robert's or Naegele's, coxalgie or any bony or cartilaginous growth of large size.

**Fetal**—Spina bifida, monsters, hydrocephalics of moderate size (if too large do a craniotomy), markedly overweight fetus.

**General**—Placenta praevia or separation of placenta in a rigid cervix, advanced tuberculosis, or cardiac incompetency with little or no compensation. Toxic cases, every patient is a law unto herself.

\*C. B. Cortright (2287 Telegraph Avenue, Berkeley, California). M. D. Columbia Univ. Coll. Physicians and Surgeons, 1902. Graduate study: New York Lying-In, Norwegian Hospital and Saint John's Hospital (both of Brooklyn, N. Y.). Scientific organizations: Alameda County Medical Society, C. M. A., A. M. A. Practice limited to Obstetrics since 1915.

It is possibly worth while simply to announce that knowledge of the psychology of sex is getting yearly on a firmer foundation and to warn against the one-sided and propagandistic statements of self-assumed "authorities" who, with no appreciation of medical relationships, and with no medical training or experience, present a partial and misleading picture of sex development and relationships. All human life, physical and emotional and intellectual, positively cannot be reduced to terms of sex. The original ideas of Freud are not acceptable today to the great body of competent medical psychologists. The danger in sex education lies chiefly in separating sex off into a separate taboo compartment when as a matter of fact it is a normal part, and only a part, of life. It is distinctly *not* the determining and chief developmental influence in infancy and childhood. The child learns more by imitation than by any other means. Too many exponents of sex propaganda, so called, are merely satisfying a morbid curiosity of their own or expressing an abnormal sex life of their own. Sanity and plain horse sense must guide us here, together with the technical experience and studies of medical specialists of broad training and broad sympathies.—Alfred C. Reed, Editor *Gyrotopico*, January 12, 1927.

\*Edgar Brigham (Dinuba, California). M. D. College of Medical Evangelists, 1917. Practice: General.



## EDITORIALS

### THE 1927 C. M. A. ANNUAL MEETING

Elsewhere in this issue may be found an announcement by the Local Committee of Arrangements pertaining to our Annual Meeting at the Los Angeles Biltmore, Monday to Thursday, April 25-28.

With a number of nationally known physicians who will address general sessions and the additional splendid programs being arranged for our own speakers, the meeting promises to be particularly successful and the largest in attendance in the history of the Association.

Arrangements for the social program will be in keeping with Los Angeles' well-earned reputation for hospitality.

### WHO ARE THE INDIGENT

According to California law as it is being interpreted, a patient is "indigent" not only when he is too poor to pay anything, but even when he can pay all his costs of sickness, *except a doctor's fee*. The doctor not only donates his services freely to the county or municipal institution, even when the county is reimbursed for part or all the other costs of service to the patient, but the doctor is "not permitted" to receive even a gratuity from the grateful patient who may still have some self-respect he wishes to retain. Free service to the deserving poor always has been accepted by doctors as a duty, if not a privilege—and rightly so. But under our present scheme of things he is not rendering charity to the poor, *but he is rendering it to government*, which is responsible under its own laws to give this service. Nor is this all; doctors not only render charity service to county governments—millions of dollars worth of it annually in California alone—but they pay their share of taxes and contributions to organizations who are required by law or voluntarily assume the responsibility for the care of the indigent sick and who proudly claim credit for what they are doing for the poor. The only credit the doctor gets is a guarded compliment carefully buried in an annual report that no one reads; but more often he gets drastic criticism, often in the public press, or even a malpractice suit for his alleged incompetence or dereliction of duty. This in spite of the fact that, of all those engaged in serving the sick in government hospitals, he is *the only one who is not paid*.

It is one thing—and a highly praiseworthy one—for the doctor to serve indigent clients as he does others in a direct sympathetic manner; and it is quite another to serve a government free, that it may find other uses for the taxes it collects from doctors, among others, to discharge this very obligation.

California has traveled far and is going ahead with speed on this dangerous road that is leading to an obvious destination. Official reports show that in one hospital of one county last year the doctors gave without cost 30,000 hours of their services to some 30,000 different patients, spending nearly one-

half million patient-days in the hospital, while the county collected, when it could, as it is permitted to do by the Pauper Act, \$3.50 a day from its bed patients and 50 cents a visit from the ambulatory sick.

Another interesting feature of this medical charity rendered by the doctors to a rich county government is shown in the method of handling the many county and city employees who are perforce beneficiaries under the industrial accident law of the state. These are served *free*, although state law provides payment according to a legal fee schedule for the doctor who renders the service. It is not revealed whether the many thousands of dollars thus contributed by doctors benefits the county as a "self-insurer" or goes to swell the net earnings of several million dollars annually by the state insurance company alone.

It is true that a comparatively small percentage of the patient's fees in this hospital or in other county hospitals that employ similar methods are collected, for reasons obvious to those who know human nature. But the educational value of the method in encouraging government dependency, making thriftlessness honorable, and increasing possible political power where it may be wanted has possibilities.

It would be difficult to take issue with a properly safeguarded policy which insists that every patient who can do so purchase needed service from private sources at such rates as he can secure; and that those who cannot afford to pay the fair costs of care thus amply provided, be required to pay such part of the cost of service in government institutions as they can afford—*PROVIDED*, a fair proportion of such income goes to the doctor for his service. All of the other thousand or more persons who take part in this service are paid, as they should be. But why discriminate against the doctor, and tax him, in addition, to help pay the other employees' salaries as well as to support other government clinics available "free" alike to "rich man, poor man, beggar man, thief."

However, history is convincing that the policy of government institutions, designed to serve the poor, by making even small charges to those who will pay them, leads inevitably to one of two logical conclusions: it falls by its own weight—often with a crash of political and economic importance—or it leads to a government monopoly of a kind particularly repugnant to most thinking people, including those served.

This editorial is a discussion of principles and policies and is not intended as a reflection on the many able and conscientious leaders who are confronted with an astoundingly complicated problem of the first magnitude, involving many angles, in directing the welfare of the more than two million citizens of the one county from which we have the last records.

### THE PROPOSED GOVERNMENT MONOPOLY OF INDUSTRIAL MEDICAL PRACTICE

The recommendation of the California Industrial Accident Commission that the legislature give to this government bureau through its state insurance

company a complete monopoly of industrial medical practice is the most far-reaching and boldest bid for state medicine that has occurred in our country since the initiative petition for compulsory health insurance was so badly beaten by the voters of California some years ago.

The only surprise to those who have followed the additions, amendments and rulings employed in the expansion of this law since its enactment some years ago is in the boldness and baldness which characterizes this latest move and the naive arguments put forth in its support.

The principle of industrial accident insurance is a sound and humanitarian one that needs to be sanely developed. It is now being handled by one state insurance company, some thirty private insurance companies, and scores of self-insurers. Upon this competitive basis the state insurance company (state fund) claims to be doing a majority of the business and at the same time refunding to its policyholders an average of 30 per cent of premiums paid. These refunds, it is stated, have aggregated over \$11,000,000 during the few years the state has been active in the insurance business.

A substantial amount of this profit has been made by paying a ridiculous minimum for physicians' services and by grinding down payments for hospital service far below the cost of rendering it, so that some of the hospital's service to the assured must be made up by private or organized philanthropy.

Even the greatest of our trusts would be feeling pretty good over such prosperity, but the state bureau wants to go a step further and forbid all competition by private business. Why?

We suspect that the reasons, or many of them, including some likely to prove embarrassing to politicians, may come out in the intensive fight on this politico-socialistic move sure to take place in the current session of the legislature.

The greatest opposition to the present law as it is administered is, what in effect amounts to taking from the patient the right of choice as to who shall serve him. It is a well-known fact that by means unnecessary to discuss at this time, a group of laymen allocate an amazingly large share of the medical work to a remarkably few doctors, often to the dissatisfaction of both the patient and the doctor of his choice.

Under present competitive conditions it so happens that each insurance company, including that of the state, has its own group of doctors and these many groups insure an allocation of the medical work more widely and, therefore, more pleasing to patients and doctors than would occur under any monopoly, state or private.

The very heart of all such insurance is a medical one; a problem of the first magnitude which affects over a million citizens of the state. The officers of the state insurance company and the industrial accident commission are appointees of the governor, liable to selection and change practically at his pleasure. Although primarily a medical question, no educated physician is, or ever has been one of these appointees. It is true that the commission engages the services of a highly respected medical director, but he is not a member of the commission. So, too,

the state insurance company engages one or more doctors, but the best that these may do is to make recommendations. So, as an actuality, the control of a great medical problem, including to an amazing extent the selection of the doctor an assured may have, is largely vested in political appointees of government bureaus. The story of how this authority works out may be told at the proper time, but to further governmentalize this service by eliminating all competition might very well lead to conditions calculated to jeopardize the whole worthy scheme of industrial insurance.

That government monopoly of accident insurance is only a resting station to further ends seems apparent from a glance at trends in the field. Since the original law was passed, time after time whole groups of additional diseases have been brought under its provisions; sometimes a hundred or more new ailments have been added by a single decision, until as the law now stands it covers not only accidents but a large percentage of the infirmities of mankind. More undoubtedly will be added. When we get a little further along this road and then give a state government bureau a monopoly in enforcing the law, it would only require one more easy step to have complete compulsory state health insurance for California; more universal and more completely under political control than exists in any other country.

Since the above was written, C. W. Fellows, able insurance executive, for nine years director of the State Insurance Company (San Francisco *Chronicle*, December 27), in discussing the attempt of the State Fund to give to itself a monopoly of industrial accident insurance by legislative enactment says:

An analysis of the situation proves conclusively that there is no occasion whatever for the establishment of a bureaucratic monopoly under our compensation law. At present employers have a choice of insurance carrier types which include state insurance, interinsurance, mutual insurance, nonparticipating stock insurance and participating stock insurance, and there is no agitation on the part of employers, about 70 per cent of whom carry private insurance, for a monopolistic state insurance fund. Some, at least, of the state fund's competitors are today providing a far speedier, more intelligent and more satisfactory service to both employers and employees. In addition, injured workmen under these private company policies are better cared for and are receiving more prompt payment of their weekly compensation than are those covered by state insurance.

During my nine years' service with the State Compensation Insurance Fund I consistently held to the view that the elimination of competition could have no other result than to bring about the usual attitude of bureaucracies—laxity, arrogance and inefficiency, to say nothing of the enhanced facilities for political use of the organization. My experience constantly impressed upon me the fact that only through the sharpest competition could the service of such an institution be maintained at even a fair standard of efficiency.

The latest actuarial examination of the fund shows that, in order to successfully compete, it is paying dividends in excess of its earnings, necessitating the depletion of the surplus accumulated under the previous management. The report covering this is on file with the State Insurance Commissioner, but that feature of the report, for obvious reasons, has been given no publicity by the State Fund management.

During my administration of the fund I was con-

tinually importuned by politicians to make room in the organization for their friends, and pressure was brought to bear upon me to take back employees discharged for rank inefficiency. At one time an attempt was made to divert the moneys of the fund to highway finance. If I had not stood stoutly against this, the action would have reduced the surplus of the fund approximately half a million dollars. Should the need for insurance brains and competitive instincts be removed by the legislative creation of a bureaucratic monopoly, the greater opportunity for sinecures and the paying of political debts is very apparent indeed.

Governor C. C. Young commented on this question in a letter dated August 16, 1926, in the following language:

"In my own business, for a number of years, my firm wrote all our compensation insurance with private companies, and with satisfactory results. From my present knowledge of the situation, I do not see any necessity for a change in the existing law as regards this matter."

It is one thing to make accident and health insurance compulsory for a third of the population of a great state and in effect require the beneficiaries to accept the doctors and hospitals designated by a score or more competing insurance companies and many self-insurers; but it is something else to reduce this enormous medical problem to a government monopoly, with the right to fix premiums and force a million assured to accept this service of an amazingly small group of doctors, selected for them by nonmedical appointees of a government bureau and paid the inadequate fees that have characterized this medical price-fixing bureau since its inception.

#### ORGANOTROPIC VERSUS ETIOTROPIC ACTION IN THERAPEUTICS

The first cardinal requirement of rational treatment is removal of the cause, and sometimes this is simple enough, but more commonly it is the most difficult, if not impossible, task. The latter is true even of conditions whose etiology is understood. The situation would appear more chaotic with those whose etiology is unknown, yet it is in many diseases of unknown etiology that certain measures demonstrate most satisfactory therapeutic results. This appears to be true of the general group of allergic conditions. While the mechanism of the therapeutic responses in these conditions is not yet understood, the results already obtained point the way to future studies. These, it is hoped, will be useful not only for an understanding of the so-called etiotropic and specific, but also of the organotropic, humoral and nonspecific agents. It is the latter group that merits extended consideration, for their usage in therapeutics has not always appeared rational, possibly because we have been too greatly impressed with "specific" agents. The older alterative and general tonic drugs fall into the category of the nonspecific and organotropic agents.

A few examples of demonstrated indirect and organotropic actions will make it clear that specificity is no longer the *sine qua non* of therapy, nor that direct action is the only worthy one. Dale showed long ago that the pressor action of nicotine, a specific ganglionic poison, was only partly due to ganglionic stimulation. The chief part was due to an increased output of epinephrine from the adrenals caused by the nicotine, for the typical rise of blood

pressure was prevented in adrenalectomized animals. Tainter has shown that gross edema of the head can be prevented by nontoxic doses of strychnine, nicotine and some other drugs; providing the adrenals are intact, the preventive effects being due to increased epinephrine output from an action of these drugs on the adrenal glands. As the result of such indirect actions of strychnine, really actions of epinephrine, several investigators have demonstrated a general stimulation of the sympathetic nervous system. It is interesting to note that such stimulations are better sustained than from the injections of epinephrine itself. Proceeding upon the basis of such results, the tonifying action long attributed to strychnine may not be so irrational as it once appeared on classical pharmacological grounds. A tonifying action may be easily visualized from the increased epinephrine on the circulation, the maintenance of vascular tonus, the increased basal metabolism, the diminished muscular fatigue—phenomena that have all been demonstrated with, and are well-known actions of, epinephrine itself. The contributory benefit from an improved circulation must in itself be an improvement of considerable moment for functions in general. All these rather than the bitter stomachic effects, which are perhaps largely psychic, may be the basis of strychnine therapy, an altogether indirect and organotropic action, and not at all connected with the conventional increased reflex excitability or convulsant action of the drug. While the indirect actions of strychnine have been demonstrated with rather large therapeutic doses, it is reasonable to suppose that some part of the action is occurring with ordinary therapeutic doses. The physiological methods of measuring the epinephrine output, though delicate enough when compared with other methods, are nevertheless gross and crude when compared with the scarcely measurable outputs in virtue of scarcely measurable natural stimuli going on unconsciously in all of us. The time may come when such minute and apparently insignificant quantities of epinephrine and other constituents will be measured. Then perhaps they will no longer be regarded as insignificant.

Moreover, it need not be an increased output of epinephrine that is the basis of the alterative and stimulant actions of therapeutic agents. Outputs of other secretions, to mention only the thyroid and pituitary, have not yet been extensively tested in this connection, although in the case of pituitary it seems well established in lower species that pituitary can yield constituents whose presence in the circulation increase capillary tonus. The recent work of Geiling and Campbell shows that the circulatory actions of pituitary extract are mediated through altered states of the tissues. The excited state of bronchial muscle determines the usefulness of epinephrine and ephedrine as correctives of asthma. Marine has shown that the basal metabolism is changed by administering adrenal cortex which acts through the thyroid gland. Insulin, no doubt, too, exerts its action through the tissues, perhaps through the skeletal muscles and not directly through the blood sugar changes, though the latter are the main index of its effects. The recent results of Collip, with para-



thyroid extract indicate that this therapeutic agent mediates its benefit through calcium mobilization. The list of agents of this type is increasing and the whole field of therapeutics offers new and alluring prospects. Adequate exploration of this field may ultimately reveal that other drugs exert their benefits through the medium of tissues, glands, organs, etc. This attractive viewpoint has been suggested by Dale as the probable mechanism of the beneficial action of most chemotherapeutic agents, including quinine in malaria, arsphenamine in syphilis, etc., for these drugs are notoriously inefficient on the parasites of these diseases *in vitro*; that is, they are probably not specific, for they do not act directly on the infecting organisms.

In seeking to explain more fully and to determine the basis of therapeutic actions, and thus to fill many gaps in our knowledge, it will require methods as yet imperfectly developed, and at present difficult of application in biology. The ordinary methods of pharmacology probably will not suffice. Various physical and chemical changes in the tissues, not easily recognizable or demonstrable, nevertheless must be given attention, for in these indirect effects on the organism with its multiple factors may reside the hitherto unrecognized explanations of drug actions. It is possible that therapeutic improvements may be elaborated as the result of such fundamental studies. In this category may indeed belong the recognized merits of malarial infection and of proteins in the therapy of neurosyphilis, and of other older practices and measures. From this it follows that therapeutic agents need not be etiotropic, nor even specific, but, on the contrary, much good, or even more, may be expected from the organotropic and humoral varieties. The possibilities of the latter appear wider and greater; and they are all the more alluring in view of the conspicuous failures of the alleged "specific" dyes, and of the continued effort to improve on and seek substitutes for yet more "specific" antisyphilitic remedies.

Twenty-two thousand syphilitics were reported (by number, as required by law) to the California Board of Health during the last two years. A comparison of these figures with Ophüls' report (Stanford University Press) of the findings in 3000 necropsies gives food for serious reflection on the effectiveness of another of our many laws. No one can make even an intelligent guess as to the number of syphilitics nor of the ravages of this "king of diseases." Certainly not more than 5 per cent of them are being reported as required by law in this or any other state. This, after many years of intensive, expensive effort seems to signify that these laws and procedures need further study. We know that thousands of infants are destroyed by syphilis before they are born, other thousands are sacrificed shortly after birth, or live unhappy, unhealthy lives and often become public charges. We know that syphilis is a powerful factor in producing the rapidly increasing population of our state institutions, and that all of these tangible evidences of its frightful havoc are but an obscure index to its far greater damages, of which we have no collective information, and which we are not getting and will not be able to secure.

Isn't it likely that our compulsory notification law or, more correctly speaking, its implication as fixed in the minds of most people, violates something that is inherently resented by the average citizen, and by the majority of physicians who serve them in confidence, as unwarranted interference?

Physicians report smallpox, diphtheria and many other communicable diseases with at least a semblance of accuracy, but that they do not so report syphilis is obvious.

The law has done some good in encouraging a certain number of syphilitics, chiefly those already semidependent, to apply for treatment at public expense. Such treatment probably keeps many from drifting into complete dependency and no doubt leads to the cure of some. But the great harm of this most prevalent disease in the destruction of infants and the frightful crippling of young men and women goes on apparently but slightly affected under present methods.

Whether existing laws are proving an asset or a liability in attempts to combat syphilis is not under review; but whatever the answer, the weight of medical opinion is, that some method or methods not yet in evidence must be instituted before we move forward as we should toward the control of the most far-reaching, destructive and crippling enemy of mankind.

For some time The Forum magazine has been running a department of definitions of words and phrases. They got along pretty well until their readers started to define "the normal child" and "the perfect child"—then what a stew. It is interesting and amusing and promising of long delay in establishing a standard of normality which, of course, does not exist among children or other growing things.

A significant development of public health work in New York is the recent establishment of children's health consultations on a county-wide basis, *under the management of local county medical societies*; this assuring real decentralization in the work of preventing the diseases and defects of childhood.

The county medical societies are assuming the responsibility of holding these consultations in the rural districts where they are most needed, appointing the medical examiners from their own members. Some of the societies have held symposiums on the findings of the consultations, discussing ways and means of increasing their effectiveness, and laying careful plans for the follow-up. When the latter work is done an endeavor is made to get those who have been examined to go to their own physicians for treatment and corrective work. "An allotment of \$15 from federal funds for a four-hour clinic day provides the fee of the physician who makes the examinations," says *Health News*, the official publication of New York State Department of Health. Some county societies, we learn use the funds secured from this work for the promotion of other society purposes.

This is a most gratifying and encouraging movement. Its extension to the some 3000 counties would prove the first chapter in a new epoch in medical progress. What an opportunity!

We are informed that William Randolph Hearst's policies include an editorial commendatory of physicians, twice yearly in each of his papers. One such recent editorial from the *Los Angeles Examiner* says in part:

"The service that they (physicians) give is truly remarkable. They have made for themselves a human code as fine and helpful as mankind has ever known and they obey it with the devotion and self-forgetfulness of soldiers enlisted in a crusade.

"But there is something more than that even. They are engaged in a continual fight not only against the illness suffered by the individual, but against disease itself. The advance in medical science has been one of the great historic contributions of this age. In trying to find ways to banish the ills that flesh has been heir to—and succeeding in many notable instances—the medical profession is doing that which tends to its own extinction. For if the program of the doctors finally prevails, there will not be any major diseases. And that would mean fewer doctors.

"One of the noblest records of the race is the story of the medicos. It has its great dramatic chapters, as during plagues and war, and in cleaning up the fever-infested places of the earth. But the main part of the narrative is provided by the daily acts of service of these

men who have taken upon themselves an obligation that is perhaps greater in its exactions than any other known to humanity."

The statement broadcast by the Federal Children's Bureau that they "REACHED" nearly a million babies and 180,000 expectant mothers during 1926, caused editors of all classes to "reach" for their books on synonyms and it brought a grim smile to 150,000 bedside doctors who are doing their best to do a great deal more than "reach" their patients.

Some editors who understand "reach" only in the political sense are confused as to just how it applies in rendering medical care.

Glenn Frank, college president, writer of syndicated feature stories, former magazine editor, has caused quite a lot of talk by reviving again the perennial argument that doctors should serve their patients on an annual retainer basis.

One might gather from Mr. Frank's philosophy that this would constitute an innovation, when in fact it is the current method of health service among a large percentage of the world's population, and is by no means rare in our country.

It is precisely the method of all health associations, many lodges, fraternal societies, etc., and is rapidly becoming a reliance of insurance companies, industrial plants and what-not. It is the chief objective toward which government and corporation medicine is moving as fast as possible.

"What secret is the physician harboring? What is medical science planning for the race? Where are we going with the human body? Back to the models of ancient Greece, or to a new superman by eliminating disease, by exercise, by sanitation, by banishment of worry? Is disease about to be outlawed as a crime as it was in the ideal commonwealth of Erewhon? The Greeks took these questions to their God of Medicine, Aesculapius. Today, unless we refer them to God, like the Christian Scientists, we consult our family physician."

Thus the editor of *The Forum* (July, 1927), introduces an article by George E. Vincent, president of the Rockefeller Foundation, on the future of medicine. President Vincent continues: "Health is a boreome theme. The idea of normality is unexciting; it is the exceptional, the pathological, that arrests attention. Keeping fit for sport, for example," he emphasizes, "is quite another thing from the full business of merely keeping well."

"If the idea of individual normality lacks fascination what shall be said of the cause of public health? How ready the average citizen is to admit its importance, to take it for granted; how reluctant to hear about it or to try to understand it! Only when the system breaks down or interferes with the individual is he for the moment panic-stricken, indignant, or rebellious. For all the fine phrases about the triumphs of modern sanitation and hygiene, the subject of public health leaves most people cold."

Vincent believes this to be the logical outcome of imposing public health "upon communities and nations by experts who have had the backing of governments." "Further progress through official authority," believes the author, "is becoming increasingly difficult, and for a quite obvious reason. Later gains must come from the more or less voluntary behavior of the individual with respect to food, posture, exercise, sleep, fresh air, clothing, mental and emotional life. Thus it comes about that in the leading countries emphasis is shifting from sanitation and epidemiology to personal hygiene, from an external and compulsory protection of population groups to the education and stimulation of the individual."

"This change of emphasis," continues President Vincent, "is the characteristic feature of contemporary public health. It reveals itself in the increasing complexity of official machinery, in the multiplication of specialized voluntary societies, in health education in schools and colleges, in a growing volume of health publications, in popular articles, in health posters and films. The average individual is being exposed to warning, suggestion, ap-

peal, and exhortation. And he for the most part is protecting himself, so long as he feels fairly well, against the discomfort of reflection and the inconvenience of changing his mode of life."

"The change of emphasis in public health work from cure to preventions has caught the doctors napping. The average physician is ill prepared to make the periodic health examination and to give the advice about personal hygiene which the new régime demands; he has been trained to look for disease rather than for health."

This entry of public health officers into competition with personal health doctors need not cause these "napping" servants of health concern, particularly in view of the fact that the best of the statistics made by the self-appointed super-doctors show that they can find few, if any, healthy subjects on whom to practice their prevention. Someone must repair the defects and broken parts in the overworked automobile, used as an analogy by the author, before the preventors find material suitable for their advice. There is more for the human repair men to do than ever before in the history of the world, and we suspect that most people will continue for a long time to listen to the doctor who has repaired defects about how to avoid future accidents, rather than the government inspector who is ever present with his "super-knowledge."

President Vincent concludes his discussion with the sound statement that, "in spite of confusing doubts and queries, generally indifferent to them, the protagonists of public health and hygiene go their way, sanitating the environment, trying with increasing success to control communicable diseases, and urging groups and individuals to live wiser, more wholesome lives, not simply for the sake of escaping disease, but to know the positive joy of vigorous physical and mental activity in work and play and community life."

If they only would!

Deputy (New York) Commissioner of Health, Paul B. Brooks (New York State Jour. Med., December 15, 1926), tells doctors there is a future in the private practice of disease prevention. He believes that the alleged decrease in private practice caused by the invasion of their field by government and other organizations may be overcome by the private doctor branching out into new lines.

It is suggested that the private physician could "develop a paying practice made up largely of preventive work." Protective inoculations are mentioned as some of the "many things that a physician" (presumably meaning the garden variety) "can do in this line." Such logic (?) overlooks the fact that it was precisely from these preventive and other personal health services that the private physician earned a fair share of his livelihood until government largely drove him from the field with its organized propaganda and offered—to rich and poor alike—these services, and even the materials used, "free."

It is hard for the personal health physician to meet government competition and government propaganda in offering everything "free," but in spite of the handicaps and ballyhoo about free service, isn't it a fact that personal health physicians continue as formerly to do much of the protective inoculation and other preventive work for most of their clients? The sales tags of drug stores reveal the answer.

Administration of Cod Liver Oil—Henry J. Gerstenberger, Cleveland (*Journal A. M. A.*), advises that cod liver oil should be given once daily on an empty stomach and when most of the family members are likely to be at home. In other words, the cod liver oil should be given in whatever dose thought necessary before breakfast. If under these circumstances the child vomits its first dose, a second should be immediately administered. As it also is a good policy to see that an antiscorbutic substance is administered daily, a small amount of orange juice, if desirable, may be taken immediately after the cod liver oil has been swallowed. The parent, however, is advised not to offer the orange juice as a reward or as a "chaser," but to get the child to understand in the first place that cod liver oil is essential to his welfare, and in the second place that he will get accustomed to its taste within a week or ten days.

## MEDICINE TODAY

Current comment on medical progress, reviews of selected books and periodic literature, by contributing editors

**The Editor:** This new venture is intended to be an extension of the editorial section of CALIFORNIA AND WESTERN MEDICINE. That there is a need for it seems manifest by the expressed opinions of our advisors. In order to distribute the tremendous amount of work necessary to make the effort worth while, the broad field of medicine has been more or less arbitrarily divided some forty ways with one or more contributors to each subject.

Clear, brief comments of editorial or high-class textbook character on points in medical progress; reviews of books and magazine articles on any subject, from any source, and other matters which in the opinion of the contributing editor, whose name appears at the end of his comment, are of importance or significance to all physicians, is the chief aim of this venture.

Members interested in assisting to make this department serve its useful purpose are invited to communicate with the editor.

### DERMATOLOGY AND SYPHILOLOGY

**T**HE importance of a thorough knowledge of syphilis in the practice of medicine has been stressed by many leading teachers. This disease is so common, and at the same time so protean in its manifestations, that many of the tragic errors in practice are due to the failure of an early diagnosis or to insufficient treatment. The subject is so broad that a definite specialty has developed around it in spite of the fact that its manifestations concern alike the general practitioner and the various specialists. Syphilis has been studied and written about since the fifteenth century at least, but the most striking advances have all occurred during the present century, starting with the recognition of the causative organism and continuing with the development of the Wassermann reaction as an aid in its diagnosis and the various arsenicals in its treatment. During the past few years, intensive research in laboratories and clinics devoted to the study of syphilis has resulted in an extraordinary improvement in our methods of diagnosis and treatment. These advances have all been published in medical periodicals, but the material is so scattered and so difficult to evaluate that only those who are specially interested in the subject have been able to keep pace with them. There has been no single text which presented the entire subject in a modern manner. This gap has been filled by Stokes' <sup>1</sup> book on syphilis. This book is a complete compilation of our present knowledge of syphilis augmented by a huge personal experience under the most favorable conditions for scientific study. The subject is covered in a single volume with painstaking thoroughness clarified by an orderly arrangement that makes it possible to study any particular phase that is of particular interest. The availability of the material is greatly augmented by the employment of clean-cut tables wherever they are practicable, by numerous good illustrations, for the most part photographs, and by a full and accurate index. Many case histories are used to point out possible pitfalls and to illustrate particular phases.

1. Stokes: Modern Clinical Syphilology, 1926 (Saunders).

In addition to taking up all the angles of scientific diagnosis and treatment, Stokes includes discussions of his own methods of dealing with the patient from the personal standpoint under given circumstances. This is a phase that is often difficult and one that is rarely discussed in textbooks and monographs. His particular methods may not always agree with our own ideas on the subject, but at least show us one acceptable path. Some of the details, especially in regard to treatment will probably require revision with passing years, but Stokes has presented modern knowledge of syphilis in a form that makes it readily available to everyone. His book is a milestone in the teaching of modern medicine.

HOWARD MORROW.

**T**HE erysipelas-like eruption among fish handlers, first described by Rosenbach in 1884, has been recently restated by Klauder, Righter, and Harkins. <sup>1</sup> It is frequently seen in workers exposed to fish (particularly shell fish), game, and cheese. Gilchrist traced the cause to bites by crabs and cuts from their shells. It is also observed in veterinarians accidentally inoculated through a needle prick when immunizing swine with the serum of swine sickness, and in persons handling diseased pork. There occurs a purplish-red spreading erythema limited almost exclusively to the hands and wrists which lasts all the way from five days to several weeks. Ordinary erysipeloid does not spread far and the symptoms are mild, but when due to infection from swine may involve the hands, forearms and arms, and there may be considerable, painful swelling with lymphangitis and enlargement of regional lymph nodes. Klauder and his co-workers studied one thousand cases among commercial salt-water fishermen. This disease is the chief cause of disability among fishermen who work in fish ponds and handle live salt-water fish. In spite of all treatment the usual period of disability has been from two to three weeks. The authors found that the causative organism was identical with the bacillus of swine erysipelas, and they prepared a serum which they injected intramuscularly with very encouraging results.

H. N. Cole and Chambers <sup>2</sup> found that after three or four weeks of daily injections (in doses corresponding to 5.5 mg. of mercury) the total daily excretion averaged about 1 mg. of mercury. Only one-sixth of the injected mercury is excreted. The remainder accumulates at the rate of about 4.5 mg. a day. With inunctions the excretion rises progressively so that it is about four times higher at the end of the fourth week than at the end of the first week of treatment. At the end of the fourth week of inunctions the excretion is almost double that of the injections. The injections act more promptly, but the inunctions are presumably more powerful. This corresponds with our clinical experience. In

<sup>1</sup> Klauder, J. V.; Righter, L. L., and Harkins, M. J.: A Distinctive and Severe Form of Erysipeloid Among Fish Handlers, Archives of Derm. and Syph., December, 1926, Vol. 14, No. 6, p. 662.

<sup>2</sup> Excretion of Mercury After Intramuscular Injection of Mercuric Bromide, Inunction and Rectal Suppositories, Archives of Derm. & Syph., December, 1926, Vol. 14, No. 6, p. 683.



the latter instance there is very considerable storage of mercury in the follicles each time it is rubbed in. Absorption of mercury from rectal suppositories appears to be insignificant.

HARRY E. ALDERSON.

### TUBERCULOSIS

**THE** use of sunlight in the treatment of pulmonary tuberculosis has received much attention from physicians since Rollier demonstrated its therapeutic value in tuberculous bone and joint disease.

It is logical to believe that sunlight, one of the most potent agents for the stimulation of metabolism, and proved to be effective in surgical tuberculosis, also should be useful in the treatment of pulmonary lesions. What is the reason that with all the experience in light therapy obtained by clinicians during recent years that there should be no unanimity of opinion among them?

Pollock<sup>1</sup> believes that "a review of the literature is more or less confusing and does not greatly assist one in estimating the value of heliotherapy in pulmonary tuberculosis if one gives equal weight to the opinion of each writer."

Indeed, the opinions of the authors quoted play the whole scale from optimism to strong disapproval of the use of sunlight in pulmonic lesions, and one is reminded of the discussion that used to wage for and against the use of tuberculin in the same condition.

The reason for this diversity of opinion is not hard to find and lies in the fundamental similarity between the effect of sunlight and tuberculin upon a tuberculous focus. Sunlight is a potent agent for the stimulation of metabolism. The effect of a light bath on a tuberculous lesion is similar to that of a dose of tuberculin, that is, it causes a perifocal reaction which, when properly graded and spaced, initiates a healing process.

The effect of an overdose of sunlight resembles in many ways the effect of an overdose of tuberculin: increased temperature, increased toxemia and frequently bleeding.

It is essential, therefore, to select the patients who are to be exposed to sunlight with the greatest care. Fibrous lesions react best, while improvement is less marked in those individuals whose lesions approach the caseous or fibrocaseous type.

In other words, activity and toxemia are the warning signals in sun exposure as they are in the use of tuberculin. Sunlight is a stimulant of activity, and an overactive focus must not be further stimulated.

The careful consideration of dosage is an essential factor of success in the use of sun exposure. The author advocates a modification of the Rollier schedule, dividing the body into zones but limiting the exposure at first to two-minute intervals instead of five minutes as is usually done. The chest is not exposed until the rest of the body is pigmented, and great care is used in exposing the chest where pulmonary activity is present.

He concludes that exposure to sunlight, or to

artificial rays where sunlight is not available, is a valuable therapeutic aid in the treatment of lung tuberculosis.

Patients showing activity and toxic symptoms must be carefully guarded against undue reactions, and precautions must be used against overstimulation.

Sunlight is of great value following thoracoplasty and artificial pneumothorax.

Success with this treatment, as in many other therapeutic measures, depends very largely on the proper selection of cases.

LEWIS SAYRE MACE.

### SURGERY

**SKIN GRAFTING**—Skin grafting has now reached a stage of scientific understanding. New terms<sup>1</sup> as autograft, a graft from the patient himself; isograft, a graft from an individual of the same species; and zoograft, a graft from a lower species, are now employed. Clarity as regards the source of grafts has been reached, and only the autograft<sup>2</sup> is recommended. Histological studies of the graft have led to the rational conduction of the technique of operation and the postoperative care.

For the first two to three days a skin graft is as a foreign body living a parasitic life.<sup>3</sup> Life is maintained by the lymph of the host permeating into the intercellular meshes of the graft. After twenty-four to thirty-six hours the capillaries of the host begin to penetrate into, or to anastomose with those of the graft. Only by the eighth day is circulation sufficiently complete to sustain life and growth. It is necessary, therefore, to obtain the graft as free from all extra subcutaneous tissue as possible and to avoid any trauma that will occlude the capillaries. Trimming off fat with scissors pinches and compresses the capillaries. On the other hand, sharp knife-blade dissection does not, and so is advised. A fresh razor blade, held in a hemostatic forceps, serves admirably and insures the necessary sharp cutting edge.

The postoperative care is recognized as being the other important phase of skin grafting. The close and continuous approximation of the skin graft to the grafted area is a principle that underlies all dressings. This approximation is most important, both in full thickness skin grafts and in split skin grafts, as the Ollier Thiersch type. Many forms of dressings for the split skin graft have been suggested, and all are good if complete and continuous immobilization is effected, but otherwise failure will ensue. Pressure and immobilization for the full thickness skin graft is usually accomplished by the use of a mould to fit the area, by the synthetic rubber sponge, or by a bandage. A definitely measured pressure would be better. Too much pressure may mean necrosis, and too little pressure a lack of proper nourishment. Ferris Smith<sup>3</sup> says "that, since the quantity of lymph is usually proportional

1. Davis, J. S.: The Nomenclature of Skin Grafting. *Surg., Gynec. and Obst.*, 1925, XLI, 841-42.

2. Holman, E.: Protein Sensitization in Isoskin Grafting. *Surg., Gynec. and Obst.*, 1924, XXXVIII, 100-06.

3. Smith, F.: A Rational Management of Skin Grafts. *Surg., Gynec. and Obst.*, 1926, XLII, 556-62.

1. Pollock, William C.: Heliotherapy in Pulmonary Tuberculosis, *American Review of Tuberculosis*, November, 1926, p. 605.

to the height of the capillary pressure, any factor which will raise the capillary pressure will favor the increased flow of lymph. Further, we know that the peripheral venous pressure varies from 5 to 15 millimeters of mercury and that the arteriole pressure ranges from 40 to 50 millimeters of mercury. A pressure, then, which will compress the venules, that is more than 15 millimeters of mercury, and will partially compress the arterioles, meets our requirement. A dressing at a pressure of 30 millimeters of mercury has been very satisfactory in our experience." This pressure may be accomplished and determined by the use of a rubber<sup>4</sup> balloon bag and the blood pressure manometer, respectively.

Atraumatic cutting of the graft and perfect and continuous immobilization should be employed in all skin grafts. The full thickness skin grafts should in addition have a pressure of 30 millimeters. These are based upon scientific principles, and are essential to success.

JOHN HOMER WOOLSEY.

### INDUSTRIAL MEDICINE

**O**RGANIZED medical service in industry is essentially a product of the last two decades in the field of industrial management, and it promises greater development in the future than it has had in the past. Yet there is enough evidence at hand to justify the statement that the industrial physician is playing an important part in American industry.

The functions of medical departments in industry as related in the report of the National Industrial Conference Board<sup>1</sup> are preventive and curative, and include:

Physical examinations of applicants for employment and of workers returning to employment after illness.

Periodic re-examination of workers in hazardous occupations.

Treatment and redressing of injuries.

Diagnosis and treatment of minor medical disturbances as well as advice on medical problems.

Sanitation of workshops and maintenance of proper working conditions.

Health education and accident prevention.

In the smaller plants treatment of injuries is often the only work done by the plant physician, especially if he devotes only part time to industrial work or only visits if called. In larger plants practically all of the activities mentioned above will be found as the work of the medical department, and each item really belongs in any well-developed medical service.

Nurses play a rather prominent part in the work of medical departments. In the larger groups they are important aids to the physician, while in the small organizations, they represent the backbone of the department.

The physical examination of applicants is coming to be a common feature of employment management and, with the understanding of the purpose involved, opposition on the part of workers is disappearing. The object of these examinations is not to exclude persons with defects, but rather to mini-

mize sickness and accident risk by occupational selection.

A survey of 501 plants showed that over half made examinations occupying from ten to fifteen minutes and that the percentage of rejections was very small. Fewer injuries occurred in plants where examinations were made, but medical disorders were recorded in greater frequency, probably because of better medical work rather than a greater prevalence of disease.

Treatment of minor medical disorders seemed especially desirable in enabling the sick or injured worker to continue at his occupation and in preventing infections and serious types of illness. Plants should be equipped with proper facilities for diagnosis. If diagnosis reveals the necessity of prolonged treatment, the patient is generally referred to his private physician. In remote places both diagnosis and treatment are done at the plant.

Good health is an asset of the worker. The employer has a direct responsibility in seeing that this asset does not suffer impairment through adverse working conditions. Some plants also supplement this care by the use of health education and personal hygiene, which tends to better conditions outside of work.

The cost of medical service in industry has risen from an average of \$4.43 per employee in 1920 to \$5.14 per employee in 1924. The average annual expenditure for medical service was \$1.03 for each \$1000 of goods produced and \$3.62 for each \$1000 paid out for wages.

Medical service in industry has demonstrated its worth by protecting the worker from accident and disease, by health conservation, by adding to the productiveness of industry and by lessening the amount spent for public charity or for private relief, which in a number of cases would not come to the attention of a physician. Industrial medicine is already widespread, but its full influence on industry and the community is still to be measured.

C. O. SAPPINGTON.

### ORTHOPEDICS

**E**MERGING from the subcutaneous stage with the discoveries of Lister, the surgery of deformities entered the period of open operation *pari passu* with other branches of surgical procedure.

Daily wrestling with the mechanical problems affecting the motor mechanisms of crippled human bodies through intervening years brought the devotees of bone and joint surgery up to 1914 with a fund of special knowledge which proved invaluable in dealing with the skeletal wreckage of war.

So great and so urgent was the need for the application of orthopedic principles in war surgery, that those already recognized as specialists in this branch of practice were altogether inadequate to meet the demand. Groups of picked men, usually chosen for a degree of proficiency in general surgery, were trained as rapidly as possible by high pressure methods of instruction in the principles of orthopedic surgery under military routine. Thus, at once, was the spur of a great need applied to the older special

4. Smith, F.: Pressure Bags for Skin Grafting, Surg., Gynec. and Obst., 1926, XLIII, 99.

1. Medical Care of Industrial Workers, National Industrial Conference Board, 1926, p. 112.

group and a strong infusion of new blood administered.

When the war was over it seemed, for a time, that the identity of orthopedic surgery, as a specialty, might be lost through the very wide dissemination of the principles of its practice. (For a fine appreciation of his own specialty and a generous acknowledgment of its debt to general surgery, let the interested reader go back to "The Orthopedic Outlook" by Lieutenant-Colonel R. B. Osgood, *The Journal of Orthopedic Surgery*, Vol. I, No. 1, January, 1919.)

It soon became clear that there was nothing to fear for the identity of the specialty. A certain more than average fund of patience in the tedious striving for functional results and an inherent affinity for, if not aptitude in dealing with mechanical problems soon separated those who were to live and die orthopedic surgeons with general surgical experience from those who were destined to do likewise as general surgeons with orthopedic training. The result has been a broader and more sympathetic understanding among surgeons, an increasingly better service to suffering humanity and a strong and sustained advance in recreative and reconstructive surgery.

Great strides have been made in the knowledge and treatment of such conditions as congenital dislocations of the hip, scoliosis, infantile paralysis; tuberculosis of bone, the arthritides, fractures, bone-grafting, postural defects, and literally scores of lesser problems presented by crippled humanity.

The literature has kept pace with the advances of practice. The reader who is interested in a resumé of important advances is commended to the little book by A. H. Tubby<sup>1</sup> for a concise resumé of important developments during the preceding decade. As an extended critical review of the current literature, "The Reports of Progress in Orthopedic Surgery," compiled and edited by a group of Boston surgeons, led by Osgood and published from time to time in the *Archives of Surgery*, is invaluable.

The specialty of orthopedic surgery has emerged from the narrow confines and relative isolation of its earlier years. Teaching of the principles of orthopedics is an established part of medical education. Those who have made this specialty their acknowledged field of life endeavor have come to realize that any qualified surgeon who carries out orthopedic procedures according to the best standards of modern knowledge and technique does honor to the cause, whether or not he chooses to call himself an orthopedic surgeon.

Orthopedic surgery has become a great reconstructive branch of special surgical practice, and its devotees have taken their place as master mechanics in the noble guild of healing arts and practices.

E. W. CLEARY.

## PROCTOLOGY

**P**ROCTOLOGY, let it be said, has gradually separated itself from the realm of general surgery. The reasons for this are several: the increasing knowledge of pathological processes; refinements in diagnosis and treatment; introduction and use of more accurate and specialized instruments used as accessories and the reaction to exploitation of this subject by insufficiently trained individuals. Specialization tends to develop in accordance with physiological body units, thus the large bowel with its peculiar manifestations of disease has also become the object of special attention; indeed, proctologists have for this reason invaded an area beyond the original meaning of the term.

By digital examination alone 25 per cent<sup>1</sup> of rectal cancers should be discovered since as many start within reach of the examining finger, and the greater number of the remaining 75 per cent which start at recto-sigmoid junction may be observed through the sigmoidoscope. But mere examination does not suffice to establish a diagnosis, and the proctologist himself may be warned of difficulties not to be overcome by the more mechanical part of his practice.

Following the examples set in the past by the Allinghams, Sir Charles Ball, Harrison Cripps, Tuttle, Bardenheuer and Kraske, others, such as Ernest Miles, Lockhart Mummery, Bensaude, Quénu and Coffey, to mention only a few, have made real contributions to surgery of the large bowel. Through them the "Kraske" operation for rectal cancer is in desuetude, while the most radical of all<sup>2</sup> that of Ernest Miles, is either being standardized or, at least, its principles are being widely and practically accepted. In this disease, also, radium and x-rays have had their proponents and later still colloidal salts of the heavy metals have come into use as adjuncts to operation or as the sole means of hope in inoperable cases. Still under consideration, with prospects of hearing fruitful results, is the lead treatment<sup>3</sup> experiments on which began under the auspices of Blair Bell of Liverpool. Pathologists more than suggest that all adenomata of the rectum may degenerate into malignant growths, and a multiplicity of these calls for resection of the colon.<sup>4</sup>

Cancer of the rectum with chronic ulcerative colitis are the two most important diseases the proctologist has to diagnose and treat. They are both mainly surgical and the results depend on early diagnosis. Diverticulitis is much more common than has been previously supposed, and at times surgical treatment is not only correct but urgent. While putting the graver diseases forward one does not forget more common conditions which are inclined to obscure the former, nor the fact that some of these conditions are prevalent in children, such as

1. Woolf, M. S.: *Calif. and Western Med.*, 1924, pp. 612-616.

2. Miles, W. Ernest: *Surgical Treatment of Cancer of the Rectum*, *Brit. M. J.*, 1920, 11.

3. The Nature of Malignant Neoplasia and Treatment of the Disease with Lead, *Brit. M. J.*, 2:919-938 (Nov. 20), 1926.

4. Dukes, S.: Relation of Simple to Malignant Tumors of the Large Intestine, *Proc. Roy. Soc. Med. (Proctol. Sub-Sect.)*, 1926, January. Idem, in *Brit. J. Surg.*, 1926, XIII, April.

<sup>1</sup> The *Advances of Orthopedic Surgery*. McMillan Company, 1925.



fissures, adenomata, proctitis, and prolapse, while hemorrhoids are not unknown.

Hemorrhoids are, par excellence, the most frequent cause of bleeding from the anus and for this reason have been the most frequent cause of obscuring the diagnosis of cancer; but as a rule the bleeding is of an entirely different type. A nonoperative remedy for hemorrhoids which, in certain instances, will stop bleeding and very often cure the hemorrhoids themselves, is their injection by some escharotic.<sup>5</sup> This form of treatment has been disinterred from the past or, rather, kept fitfully alive mainly by the less orthodox of rectal specialists. For this we must give them due credit. It is a proper, safe and good way of effacing the smaller hemorrhoidal masses.<sup>5</sup> Fissures, in the adult, as a rule require excision. In children they usually heal spontaneously or by division of the sphincter if constipation is not marked. Fistulae are not now so commonly seen as formerly, when manifold branches opened onto the surface. But should medical measures be undertaken in their case (they usually have one common tract) they are usually curable, although several large and radical drainage wounds may be necessary at one or more operations.

With this field of surgery actively being investigated, we may expect to eradicate some of the important difficulties at present confronting us. For example, there is the large operative mortality of a desirably extensive operation for cancer of the rectum, the unknown cause and unsatisfactory treatment of the disease at present known as nonspecific ulcerative colitis, the resistance to treatment of acute and chronic proctitis, the unsatisfactory nature of all existing operations for the severer stage of prolapse of the rectum.

M. S. WOOLF.

5. Morley, Arthur S.: Hemorrhoids. Cloth \$2. Pp. 114 with nine illustrations. Oxford.

**Roentgen-ray Diagnosis of Pleural Effusions, General and Local**—L. R. Sante, St. Louis (*Journal A. M. A.*), regards roentgen-ray examination of the chest of importance in the diagnosis and localization of pleural effusions. Fluoroscopy should never be relied on alone, however, for diagnosis, and should always be checked by radiographic examination. The roentgen-ray characteristics of pleural effusions are: In general effusions: When the lung is well aereated and is freely movable: 1. There is a dense shadow occupying the lower portion of the chest. 2. The costophrenic sinus is obliterated. 3. The upper border is curved, concave, extending upward and outward from the hilum toward the auxiliary line, showing little, if any, change, on change of position of the patient. 4. There is displacement of the heart and mediastinal structures in large effusions, or, when these structures are not displaced, a persistence of the aeration of the apex. 5. Diaphragmatic shadows are obliterated, and there is a continuation of the shadow of the effusion with that of the liver or spleen. When the lung is consolidated or fibrosed and has lost its resilience: 1. There is a ribbon-like shadow along the parietal wall of the chest. In local effusions: 1. The entrapping of fluid usually occurs during the course of an inflammatory process. 2. The effusion may occur in any location where two pleural surfaces come in contact with each other; between parietal and visceral pleural layers; at the anterior, posterior or lateral chest wall; between diaphragm and lung, mediastinum and medial border or interlobar. 3. Whatever the location, the effusion produces one characteristic shadow—convex rounded border, with its base at the periphery, and the convexity inward toward the lung.

## MEDICAL ECONOMICS, ORGANIZATIONS AND AGENCIES

**Board of Medical Examiners (California)**—The annual report of the Board of Medical Examiners now in press contains much information valuable to physicians, as well as recommendations that will have the united endorsement of physicians and which merit the attention of lawmakers, as well as those charged with the enforcement of existing laws.

Dr. C. B. Pinkham, secretary of the board, has supplied us with the following highlights from the report:

The report comments on the disastrous results following the local application of poisonous preparations by so-called beauty specialists, a tabulation of deaths resulting therefrom listed, and urges legislation to prohibit a continuation of the use of poisons in toxic doses in face-peeling preparations.

Comment is made on the necessity for continued, careful scrutiny of credentials submitted by applicants from other states, as well as the issuing of duplicate certificates, the diploma mill exposé of 1924 demonstrating the ease with which fraudulent credentials may be used in securing a license to practice in a sister state.

Legislation is urged making it a felony to issue, barter, or sell fraudulent credentials to be used in connection with a license to practice in the state of California.

Legislation is also urged to curtail the incorporation and operation of quasi-fraudulent institutions or "sun-down" colleges. "So long as lax state laws permit the incorporation of 'sun-down' institutions clothed with statutory authority to grant professional degrees without exaction of a capable teaching force, satisfactory equipment and honest management, the incorporators of such institutions, careless of human sacrifice, will continue to line their pockets with ill-gotten gains through the selling of degrees. California, unfortunately, is one state where about three individuals, with approximately \$12.50 to spend, can incorporate any kind of a nonprofit-sharing college and issue any kind of a degree without molestations." Profiting by the diploma mill exposé showing the ease with which licenses to practice have been bought in other states, it has been suggested that Section 13 (reciprocity) of the Medical Act be amended so that an oral examination be required of those coming to California from other states, basing their applications on a license issued by a sister state bearing a date ten years prior to the filing date in California. An oral examination should also be exacted when any question arises as to the applicant's qualifications. Such procedure would obviate the possibility of impostors filing applications in this state, they knowing the impossibility of their passing any kind of an examination.

Applications filed during the past year exceeded those of the prior year although the total number of certificates were less, this being due to the fact that one of our California medical schools which heretofore has sent us approximately forty-five applicants for examination, had no graduating class during the year 1926.

Certificates have been granted to those presenting credentials from other states in less number than the prior year, the largest number of applicants coming from Illinois, which ranks third in the United States in the total number of physicians licensed. New York, which shows the largest United States registration of physicians, sent California the second largest group of reciprocity applicants, while Pennsylvania, the second largest in registered physicians, sent us only eight reciprocity licentiates.

California licentiates in the number of fifty-seven sought registration in other states during the year just closed.

Written examination results for physicians and surgeons' certificates show that 85 per cent passed and 14 per cent failed. Drugless practitioners: 53 per cent passed

and 46 per cent failed. Chiropodists: 100 per cent passed. Midwives: 40 per cent passed and 60 per cent failed.

The grand total of all those examined in this state under the Medical Act shows 82.6 per cent passed and 17 per cent failed.

**Hearings**—Thirty-five licentiates of the state of California were called before the board during the past year to show cause why their license should not be revoked. In this group the largest percentage of violators, i. e., 62 per cent, were those charged with violation of the narcotic law, and as a result the largest number of hearings during several years past, were held by the board. Sixteen licenses were revoked; three suspended; nine placed on probation; five found guilty and judgment deferred; while two are still pending hearing.

Report of the legal department shows fifty-four cases handled in the North, and sixty-six in the southern district, with a total of \$4016.25 received from fines on charges of violations of the Medical Practice Act, although the board some time ago adopted a policy of not requesting fines, but asking the trial judge to impose such a sentence, with probation should he so desire, which would have a salutary effect in discouraging further violations of the law.

**Enforcement**—"One of the disheartening features of the board's work is reflected in the delays offered by court procedure undertaken by those licensed to practice under the Medical Act who, having been penalized after a conscientious hearing at a legal meeting of the board, thereafter invoke the law's delays through the medium of a writ of review or some similar legal process, that results in tying the hands of the board. Those whose licenses have been revoked have only to appeal for such a writ and then practice merrily on in defiance of the order of the board, for our experience has been that attempts to prosecute such individuals for violation are given no consideration, the court refusing to proceed with the hearing on the theory that nothing can be done until the higher courts decide on the merits of the writ of review, which, in the present crowded state of court calendars, means about two years' delay."

Suggestion is made that, if legally possible, Section 14 of the Medical Act should be so amended that writs of review should go directly to the Appellate Court, thus obviating the tiresome delays now experienced in Superior Court procedure.

**Deceased**—The records show that during 1926 deaths among licentiates were increased over those reported in 1925.

The financial statement shows the income of the board during the past calendar year to have been \$62,664.86, which was considerably in excess of the amount expended.

Howard H. Johnson, director of Saint Luke's Hospital, San Francisco, after a study of comparative costs of hotel and hospital care (exclusive of physicians' fees), arrives at the following average costs for ten days' service:

Hotels (first class)		Hospital	
Room .....	\$ 60.00	Room .....	\$ 75.00
Meals .....	45.00	All extras .....	30.40
Laundry .....	2.00		
Tips .....	5.00		
Telephone .....	4.00		
	\$116.00		\$105.40
Hotels (medium class)		Hospital	
Room .....	\$35.00	Room .....	\$50.00
Meals .....	20.00	All extras .....	30.40
Laundry .....	2.00		
Tips .....	3.00		
Telephone .....	3.50		
	\$63.50		\$85.40

The eminent fairness of these figures is supported by the statements of traveling men who are allowed from \$10 to \$25 a day for hotel expenses. They are further supported by reports to CALIFORNIA AND WESTERN MEDICINE, showing that when one member of a family is ill in a hospital and the other stops at a hotel, the cost of hotel service usually exceeds hospital costs, exclusive of the physician's fee. Those who are ill in hotels find costs

still very much higher. Why is it then that thousands of people who daily pay, without grumbling, expensive hotel bills, often complain at smaller hospital charges when they are ill?

The hospital renders every service that the hotel renders—renders it day and night—as well as many services that hotels do not render at all, because they are not needed for the healthy.

For obvious reasons it costs more per room to build a good hospital than it does an equally good hotel. Salaries, wages, power, light, heat, food, bedding, subsistence, laundry, and many other essential services cost the hospital fully as much as they do a hotel.

Hotels are operated by keen business men for business purposes, and most of them make a profit. Hospitals, the better ones, are operated by equally good—often the same—business men who operate hotels, and yet very, very few hospitals make a profit.

The truth of the matter is that most of the complaints about excessive hospital charges is plain "bunk," and is of the same type that was current about hotel charges a short generation ago when hotels changed from the so-called "American plan" to the so-called "European plan" of figuring costs and making charges.

The remedy is: more extensive public information about the facts and less howling by those who should know better about the abnormal costs of hospitalization. There is not a significant bit of evidence to indicate that the costs of good hospital service can be materially decreased. This because medical progress is constantly making new demands, expensive to meet, and still further increases in hospital costs will be necessary to hospitals that fulfil this legitimate purpose.

**The National Guard and the Medical Reserve Corps**

—The National Guard of the various states is now turning in to help develop the Medical Reserve Corps and its organized units—appreciating that the latter will furnish the hospital service required by the National Guard.

Upon the request of Colonel Edgar A. Sirmey, National Guard officer, Ninth Corps Area; Brigadier-General R. E. Mittelstaedt, Adjutant-General National Guard of California, has issued an official appeal, from which we abstract:

"Outside the four General Hospitals maintained throughout the United States by the Medical Department of the Regular Army, the utmost expansion of which could do little to meet the needs of hospital service in case of mobilization, the operation of the entire hospital service for the army of the United States is reposed in the Medical Reserve Corps.

"The medical service maintained by the National Guard is entirely divisional, and makes no provision whatever for medical care except that of brief emergency within the National Guard divisions themselves.

Any member of the National Guard, on mobilization in national emergency, suffering any serious or protracted illness or injury, must therefore look for definite hospital care and professional treatment outside the National Guard divisional area.

"I feel accordingly that the members of the National Guard have a direct personal and vital interest in the building up of the General, Evacuation, Surgical and Station hospitals, the Hospital Centers, Laboratories, Hospital Trains, and other relief establishments operated by the Medical Reserve Corps, and which will be the only institutions available for the care of sick and wounded members of the National Guard, in any emergency, of whatever magnitude.

"No conflict whatever between enrollments for the National Guard, Medical Department, and for the Medical Reserve Corps, need exist. The following are some of the main reasons:

"(a) There are many doctors who do not wish to give the time, and accept the responsibilities incident to joining the National Guard, but who would be quite willing to accept a commission in the Medical Reserve Corps, as the latter requires no time or effort that the officer may not wish to give.

"(b) National Guard Medical Service is service with troops, with its professional work necessarily limited to

the emergency and temporary care of cases. There are many physicians in civil life who are interested only in the professional end of medical service, and in the direct care of the sick and disabled. Practically all the specialists come under this class, as operating surgeons, internists, genitourinary men, x-ray men, laboratory men, etc. The hospital service functioning in the nondivisional units of the Medical Reserve Corps furnishes exactly the kind of professional work that would appeal to these men in case of national emergency.

"It appears from the foregoing that the National Guard would thus help create the hospital service necessary to itself from a class of physicians who, in time of peace, would not join the National Guard, and would otherwise have to be left out of its consideration."

**Restoring the Normal Peristalsis to "Cooperation" in Health Work**—A prominent voluntary health organization in New York has instructed its local executives to "cooperate more closely with their county medical societies." It is even suggested that programs for proposed work by the voluntary agency be submitted to the county medical society for suggestion, criticism or approval before it is put into operation.

News items of similar character are appearing with increasing frequency, and the movement is worthy of emulation by other voluntary health agencies.

A completely equipped and personneled hospital is one of the features of the recently enlarged and otherwise modernized historic Palmer house of Chicago. The hospital-hotel, the hotel-hospital, and the hotel with a hospital unit are all significant developments in the "onward march of civilization."

California needs 345 more Medical Reserve Corps officers to make our quota 100 per cent. The combination of personal advantages and the privilege of rendering public service in having one of these commissions ought to make them tempting. Utah now has 103 per cent and Nevada 60.86 per cent of their respective quotas. California's percentage is now 68.80.

The salesmen of the Abbott Laboratories and the Dermatological Research Laboratories from the Middle West and the South met in the home offices of that company in North Chicago the week of December 27.

Four days were spent in intensive study of the Abbott and D. R. L. products. Playlets were staged illustrating sales points, and round-tables were conducted on subjects of importance to the salesmen and the firm. On Tuesday evening, December 28, the salesmen were invited to attend the annual Christmas dinner and dance given by the employees of the Abbott Laboratories. Over 500 were in attendance at this function. On the following evening the salesmen were entertained at a banquet given by the Abbott Laboratories in their own cafeteria, recently installed at the North Chicago plant. Addresses were given at this meeting by Alfred S. Burdick, president of the Abbott Laboratories, who reviewed the progress of the company and introduced G. W. Raiziss, professor of chemotherapy, University of Pennsylvania, who spoke on the newer arsenical compounds, particularly bismarsen, a new combination of bismuth and arsenic; Roger Adams, professor of chemistry, University of Illinois, told of his investigations in the field of chaulmoogric acids; and A. G. Young of the University of Michigan spoke of the treatment of arthritis deformans with o-iodoxy benzoic acid, amidoxyl.

E. B. Myers Company of Los Angeles, whose advertisement appears in this and subsequent issues, formerly Nurses' and Students' Outfitting Company, Inc., are continuing the manufacture of "Medico" professional garments. It is the same organization and personnel that ran the Nurses' and Students' Outfitting Company for the past twenty years.

"Medico" is a registered trade-mark, and goods are shipped every day all over the western states. "Medico"

professional garments are made in stock sizes for wholesale supply houses and made to measure for individual trade. Each line is made in a separate factory. "Medico" garments have been improved steadily through the kind suggestions from our doctor friends from time to time. This is the reason why "Medico" professional garments are more advanced and more popular than other makes.

Besides "Medico" professional garments the E. B. Myers Company furnish the colleges in the western and southern states with academic caps, gowns and hoods.

"During the year 1925 workmen's compensation and medical benefits disbursed to injured and their dependents in the state aggregated \$10,615,080, of which the state fund paid \$3,329,601, or approximately one-third. The fund is a non-profit organization and to date has returned in dividends to its policyholders more than \$11,400,000."

There were 433 deaths from alcoholism among Metropolitan Industrial policyholders during the first nine months of 1926 with a death rate of 3.3 per 100,000. This is the highest death rate for this disease for any similar period since 1917. The rate for the corresponding period of last year was 2.9; the increase since last year was approximately 14 per cent.

Cirrhosis of the liver, which is closely associated with alcoholism, accounted for 863 deaths. These deaths give a rate of 6.6 per 100,000, which is slightly below that for the same months of last year (6.7), and a little higher than for the same period of 1924 (6.3).

Deaths charged to wood and denatured alcoholic poisoning numbered twenty-four during the nine months' period.—Statistical Bull., Metropolitan Life Ins. Co.

**California Institutions for the Care of Tuberculosis Patients**—So many inquiries are received from so many sources about institutional facilities in California for the care of patients suffering from tuberculosis that the most complete list available is given below. Errors will be gladly corrected if reported promptly to CALIFORNIA AND WESTERN MEDICINE.

Of course, as physicians realize, great numbers of tuberculosis patients are being cared for in practically all classes of hospitals. The majority of the institutions marked "private" are in fact partially supported by private philanthropy and there are few, if any, in the entire list that make a profit for the owners.

Ahwahnee Sanatorium (tax supported), Madera, Merced, and Stanislaus counties, Ahwahnee. 100 beds—free and \$45 to \$125 a month to residents of the three counties; \$4 a day to others.  
Alameda County Tuberculosis Hospital (tax supported), San Leandro. 160 beds—\$1.50 a day and free.  
Alpine Sanatorium (private), Alpine. 70 beds—rates \$25 to \$45 a week.  
Alta Sanatorium (private), Alta. 25 beds—rates \$25 a week.  
Alum Rock Sanatorium (private), San Jose. 60 beds—\$37.50 to \$60 a week.  
Antonio Sanatorium (tax supported), Santa Barbara. 48 beds—free and up to \$20 a week.  
Arequipa Sanatorium (women only) (private), Manor, Marin County. 42 beds—\$10 a week ambulant patients; \$14 a week bed patients.  
Arroyo Sanatorium (tax supported), Livermore. 200 beds—free and \$75 a month.  
Barlow Sanatorium (private), Los Angeles. 90 beds—\$10 a week.  
California Sanatorium (private), Belmont. 100 beds—rates \$35 to \$100 a week.  
Canyon Sanatorium (private), Redwood City. 50 beds—\$30 to \$60 a week.  
Cathram Sanatorium (private), Colfax. \$20 to \$22 a week.  
Colfax Hospital for Tuberculosis Patients (private), Colfax. 180 beds—\$30 to \$47.50 a week.  
Fresno County Tuberculosis Sanatorium (tax supported), Fresno. 60 beds—free and \$35 a month.  
Humboldt County School for the Tuberculosis (tax supported), Eureka. 50 beds—free and up to \$2.50 per day to residents of county; \$3.50 a day to others.  
Independent Order of Foresters Sanatorium (private), Eucalyptus. 75 beds—free to members.  
Jewish Consumptive Relief Association (private), Duarte. 90 beds—free.  
Kolb & Kirschner's Sanatorium (private), Monrovia. 90 beds—\$25 to \$40 a week.  
La Vina (private), Pasadena. 100 beds—free and up to \$22.50.  
Las Solanitas, Housekeeping Cottages (private), Palm



Springs. 20 beds—rates \$40 to \$150 a month for furnished cottages.

Monrovia Sanatorium (private), Monrovia. 13 beds—\$25 to \$40 a week.

Mother Cabrini Tuberculosis Preventorium (private), Burbank. For Mexican and Italian girls under 14 years of age. Capacity, 100 beds—free with a charge for those able to pay.

National Home for Disabled Volunteer Soldiers (federal tax supported), Sawtelle. 135 beds—free.

Olive View Sanatorium (tax supported), San Fernando. 750 beds—free and up to \$2.25 a day. (Residents of Los Angeles County only.)

Pinecrest Tuberculosis Hospital (private), Oakland. 11 beds—\$25 a week exclusive of medical attention.

Pottenger Sanatorium (private), Monrovia. 144 beds—\$37.50 to \$65 a week.

Sacramento County Hospital (tax supported), Sacramento. 50 beds—free, but limited to residents of county.

San Bernardino County Tuberculosis Hospital (tax supported), San Bernardino. 40 beds—\$10 a week for those able to pay. (Residents only.)

San Francisco City and County Hospital (tax supported), San Francisco. 280 beds—free. (Residents only.)

San Joaquin County General Hospital (tax supported), French Camp. 42 beds—\$2 a day for those able to pay. (Residents only.)

Santa Clara County Tuberculosis Hospital (tax supported), San Jose. 75 beds—\$7 to \$10 a week. (Residents of state only.)

Shasta County Tuberculosis Hospital (tax supported), Redding. 16 beds—free.

Southern Sierras Sanatorium (private), Banning. 24 beds—\$100 to \$150 a month.

Stony Brook Retreat (tax supported), Keene. 50 beds—\$75 a month for adults; \$45 a month for children.

The Oaks Sanatorium (private), Los Gatos. 70 beds—\$35 to \$65 a week.

Tulare-Kings Joint Tuberculosis Hospital (tax supported), Springville. 100 beds—rates according to ability to pay. (Residents only.)

U. S. Veterans' Hospital (federal tax supported), Camp Kearney. 538 beds—free.

U. S. Veterans' Hospital (federal tax supported), Palo Alto. 246 beds—free.

Vaughan Home, San Diego County (tax supported), San Diego. 60 beds—free. (Residents only.)

Weimar Joint Sanatorium (tax supported), Amador, Colusa, Contra Costa, El Dorado, Placer, Plumas, Sacramento, Sutter, Tuolumne, Yolo and Yuba counties, Weimar. 300 beds—free to county patients; \$10.50 a week to other patients.

Wright's (private), Monrovia. 12 beds—\$5 a week; patients supply own food.

## CALIFORNIA MEDICAL ASSOCIATION

W. T. McARTHUR, M. D. \_\_\_\_\_ President  
 PERCY T. PHILLIPS, M. D. \_\_\_\_\_ President-Elect  
 ROBERT V. DAY \_\_\_\_\_ Vice-President  
 EMMA W. POPE, M. D., San Francisco \_\_\_\_\_ Secretary and Associate Editor for California

### MEDICAL ORGANIZATIONS DIRECTORY

Under "Contents" in every issue of CALIFORNIA AND WESTERN MEDICINE appears the above caption, giving the page where the directory may be found.

It embraces the names and addresses of all officers of the California Medical Association; the Scientific Sections; the County Medical Societies; and various other state medical organizations.

All members of the California Medical Association should acquaint themselves with this informative page of CALIFORNIA AND WESTERN MEDICINE.

### 1927 DIRECTORY CALIFORNIA MEDICAL ASSOCIATION

The 1927 directory has been mailed to all members of the California Medical Association. To interested persons not members of the Association, copies are on sale at the state office, 1016 Balboa Building, 593 Market Street, San Francisco for \$1.

Complete and accurate information in legible type is the goal set in each issue of the directory. We had hoped that no errors could be found in the 1927 directory, but unfortunately the three following names have been omitted:

J. M. Frawley, T. W. Patterson Building, Fresno.

Thomas B. Leland, 1195 Bush Street, San Francisco.

Rodney A. Yoell, 317 Physicians Building, 516 Sutter Street, San Francisco.

EMMA W. POPE, *Secretary*.

### ORANGE COUNTY

Orange County Medical Association—The society has just completed the last half of a most successful year. A number of interesting papers have been heard since the summer recess. In September Burns S. Chaffee of Long Beach presented in a most able manner the subject of "Acute Intestinal Obstruction," bringing out many original points both in diagnosis and treatment. In October Carl W. Rand of Los Angeles gave a very practical talk and lantern slide demonstration on "Skull Fractures" based on a large series of cases attended by him both in private practice and at the Los Angeles General Hospital. In November John V. Barrow of Los Angeles presented in a most instructive way the subject of "Intestinal Protozoa," discussing the types of parasites, clinical entities caused by them and methods of treatment. In December Alfred E. Gallant of Los Angeles, visiting orthopedic surgeon at the Orange County General Hospital, conducted an excellent end-result clinic of the work accomplished on the Orthopedic Service during the past year in which he demonstrated many crippled children rehabilitated to a life of usefulness.

At the December meeting officers were elected for the coming year, as follows: D. C. Cowles, Fullerton, president; A. H. Domann, Orange, vice-president; D. R. Ball, Santa Ana, secretary-treasurer; C. D. Ball, Santa Ana,

**Low Temperature, High Barometer, and Sudden Death**—Herman N. Bundesen and I. S. Falk, Chicago (*Journal A. M. A.*), present a series of curves to show the seasonal variations in mortality from organic diseases of the heart or from organic diseases of the heart, cerebral hemorrhage and chronic nephritis combined, in mean weekly temperatures and in mean weekly barometric pressures. The curves show that mortality was high when temperature was low, and vice versa. A clearly apparent correlation between the fluctuations in mortality and in barometric pressure is not demonstrated. The authors present in table form a series of correlation coefficients which were calculated to determine the relations between deaths from organic diseases of the heart, and barometric pressure or mean temperature. It appears that there was not a significant correlation between deaths from organic heart disease and barometric pressure in 1924, and in the first thirteen weeks of 1926. There was a significant, direct relation in 1925. In 1924 and in 1925 organic heart disease deaths were very significantly correlated inversely with temperature. In the 1924 and 1926 periods there were high, inverse correlations between barometric pressure and temperature. The inverse correlations between pressure and temperature were significant in the periods in which mortality was not significantly correlated with pressure; and were not significant in the only one of three periods studied (1925) in which a significant correlation between mortality and pressure was found.

We are not only to observe our bodies as to meat and exercise, whether they use them more sluggishly or unwillingly than they were wont; or whether we be more thirsty and hungry than we used to be; but we are also to take care as to our sleep, whether it be continued and easy, or whether it be irregular and convulsive. For absurd dreams and irregular and unusual fantasies show either abundance or thickness of humors, or else a disturbance of the spirits within.—Plutarch's Rules of Health.

librarian. Delegate, 1927-28, Harry E. Zaiser, Orange. Alternate, 1927-28, J. I. Clark, Santa Ana. Councilor, 1927-29, John Wehrly, Santa Ana. Another productive year is anticipated.

The Santa Ana Clinical Society has recently heard excellent talks from Robert W. Langley of Los Angeles on "Heart Disease" and Roy W. Hammack of Los Angeles on "Fungus Infections." Officers in the latter society for the ensuing year are, as follows: W. C. Dubois, president; M. W. Hollingsworth, vice-president; Waldo S. Wehrly, secretary.

The first unit of the new Santa Ana Valley Hospital is now under construction. It is to be of fireproof construction throughout with a capacity of forty-six beds, and will be erected at a cost of \$90,000. We are all glad to see this project finally under way, and feel that it will be a fine addition to the hospital facilities of the county.

D. R. BALL, *Secretary*.

### SACRAMENTO COUNTY

**Sacramento Society for Medical Improvement**—President C. E. Schoff called the 1926 annual meeting of the society to order in the Empire Room of the Sacramento Hotel on December 21. There were forty-five members in attendance. The minutes of the last annual meeting were read and approved. The routine yearly report of the Board of Directors was rendered by President Schoff.

He called attention to the profitable year from the standpoint of papers and discussions, and then turned to future problems of the society. Due to the numerous scientific programs of the local hospital staffs which are presented by our own members, there is a possibility of repetition and monotony, and thereby detracting from our society programs. Schoff therefore suggests that invitations be extended to outstanding men of the profession from outside.

He then pointed to Sacramento as the logical medical center of northern California, and so thrust upon us the burden of carrying medicine to the laity through educational propaganda, legislation being a complete failure in every respect. He showed that we have three free medical centers here as possibilities along that line; what is needed in these is medical cooperation and actual assistance.

A resumé of Sacramento's hopes for 1928 was presented.

Schoff once again called our attention to the irreparable loss of James H. Parkinson and J. Loughridge, and closed by extending his sincere thanks to the Board of Directors for their complete cooperation and assistance.

Junius B. Harris was introduced as the new councilor for the district. Harris expressed a desire to keep up the fine work of his predecessor.

Scatena was then given the floor to speak on the Gorgas Memorial, and Gundrum followed him in saying a few words for the Walter Reed Foundation.

Drysdale, Bramhall, Wilder, Dunlap, Rulison, Henderson, Zimmerman, Foster, Hale, Gundrum, Topping Howard, and Snyder were nominated for the Board of Directors. The vote showed Drysdale, Dunlap, Bramhall, Rulison, Snyder, and Wilder elected.

Reardan, C. B. Jones, J. Roy Jones, and George Hall were nominated as candidates. The vote showed Reardan and C. B. Jones elected as delegates to the 1927 convention in Los Angeles.

J. R. Jones, G. J. Hall, George Foster, and Howard Hall were nominated as alternates. The vote showed J. R. Jones and George Foster elected as alternates.

For secretary, Thomas, Brendel, Christman, Gundrum, and Pitts were nominated. The vote showed Thomas elected as secretary.

After the reading of the secretary-treasurer's report for the year, a recommendation was made that the same dues as last year would suffice nicely. It was moved, seconded and carried that \$5 be named as the local dues, with \$10 for the state.

Reardan suggested that a recommendation be made to

the Board of Directors that one meeting a year be held under the direction of the County Hospital staff; one at the Sister's and one at the Sutter.

Schoff then introduced a number of our new members. Adjournment was made to a buffet lunch.

BERT S. THOMAS, *Secretary*.

### SAN DIEGO COUNTY

**San Diego County Medical Society**—Despite the many demands of the holiday season two excellent medical programs were presented during December, one on December 14 following a dinner at the San Diego Hotel where an attendance of a hundred greeted three members of the home society, presenting the following program:

First, J. W. Sherrill presented informally the results of the work done by himself and E. F. F. Copp at the Scripps Metabolic Clinic on the somewhat new drug ephedrin. Their work consisted on a check-up of the physiological effects of the drug upon animals and later upon sixteen cases of asthma. The physiological action of the remedy was clearly outlined—its effect upon the circulation in ordinary doses was supporting, increasing the pulse rate and also the blood pressure; repeated doses of the drug, however, failed to hold the increase in blood pressure, while overdoses tended to weaken the heart and produce fibrillation. It constricted the peripheral vessels, blanching the mucous membranes and dilating the pupils, inhibiting motor activity of the intestine and other viscera, most of these effects being due to its influence upon the sympathetic nervous system. Due to its power to dilate the bronchi it is of distinct value in relief of asthma. Many of its effects are so closely allied to those of adrenalin as to be worthy of note. Among the untoward symptoms noted by these observers were weakness and dizziness, sleeplessness, diaphoresis, palpitation of the heart, and occasionally nausea and vomiting. It is contraindicated in weak hearts. In asthma they found that the severest cases were not greatly relieved, but that most cases improved under the continued use of it for a considerable period of time; and as it is comparatively nontoxic this treatment is justified. They ordinarily gave it in doses of 25 to 50 mgm. in capsule every three to four hours. The use of this drug was discussed by the following members: Redelings, Stealy, Sharp, Lazelle, Carrington, Copp, and Sherrill.

Doctor Churchill then gave a brief review of the value of quinidine in heart conditions as brought out by the clinical use of it in the arrhythmias during the past ten years. In brief, this remedy lessens the irritability of the auricles and reduces the frequency of the oscillations. After lucidly explaining the principles of the fibrillating heart he stated that quinidine will restore the rate of the heart to normal in about 60 per cent of all fibrillations. He considers that the danger from its use has been much overstated, although embolism and respiratory paralysis are possibilities to be considered. He thought failures would be fewer and accidents largely eliminated if our cases were carefully selected, and advanced the following cautions:

1. Never use quinidine in fever to correct fibrillation.
2. Always have the patient at rest in bed when giving it.
3. Give in large enough doses to get effect.
4. Avoid giving in the case of persons who have an idiosyncrasy to cinchona.
5. Do not give in the face of a history of embolism.
6. Do not use unless heart is well compensated.
7. Do not use it in the aged.

Besides auricular fibrillation the doctor has found it of value in paroxysmal tachycardia and in premature systole.

As to method of giving he advises thorough digitalization first, then give 6 grains every four hours day and night and continue for some weeks after rhythm has been restored, giving two or three doses a day.

The discussion was continued by Stealy, Doig, and Churchill.

The program committee is to be congratulated on the high order of the scientific programs during 1926.

The second meeting was a joint staff meeting of the Mercy, The Scripps Memorial, and the County General Hospital on the evening of December 28 at the County General, and consisted of an interesting symposium on cancer of the uterus considered from the standpoint of treatment, Weiskotten clearly defining the values and limitations of the x-ray and radium, Burger discussing surgical indications and techniques and the when and how of operative treatment, while H. P. Newman made a strong appeal to the reason in advancing a surgical technique for the early restoration to normal of both tissue and function of the uterus after injuries of childbirth and infection. This point in the opinion of the writer is one that cannot be overstressed in the preventive treatment.

In the death of Dr. P. C. Remondino the County Society loses one of its few charter members, as well as a man, a physician, and public-spirited citizen who has left his stamp on the history of San Diego. The doctor's life since coming to San Diego in 1873 has been one of continuous activity, and we hope to furnish the journal a proper tribute to his memory written by one who knew him well for a long period of time.

The 18th to 23d of January are red-letter days in San Diego medicine, when Doctor Marriott of Washington University, St. Louis, will deliver a course of lectures on subjects of biochemistry in medicine. This is the second annual course of the San Diego Medical Lectureship.

ROBERT POLLOCK.

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### SAN JOAQUIN COUNTY

**San Joaquin County Medical Society**—The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8 p. m., January 6, 1927.

Twenty-four were in attendance, with Dr. Leo Eloesser of San Francisco guest and speaker of the evening.

In the absence of the retiring president, the secretary called the meeting to order and presented the new president, Doctor Barnes, who after a few appropriate remarks called for the minutes of the last meeting, which were read and approved.

The president introduced Dr. Leo Eloesser, who spoke on "Surgical Treatment of Pulmonary Tuberculosis." "As far back as a hundred years," Doctor Eloesser said, "a great Italian physician employed pneumothorax in the treatment of tuberculosis, and since then many physicians of various countries unfamiliar with the work of the Italian physician induced pneumothorax in disease of the lungs. Even as late as 1890, the late J. B. Murphy of Chicago, whose experiments and investigations placed pneumothorax on a secure basis, wrote independently, the Italian's work unknown to him. Gradually the physicians learned to overcome the obstacles presented by the mechanics of the chest.

"Introduction of artificial pneumothorax is a very simple measure. First, be sure that you are in the chest; for this purpose the manometer indicates respiratory movement. Air embolism has at times occurred and proved fatal by inducing artificial pneumothorax and other fleeting and untoward symptoms have resulted. Some accidents are unavoidable. Artificial pneumothorax is an efficient way to set the lung at rest; and all surgery for the relief of pulmonary tuberculosis has for its objective, rest of the lung. Pneumothorax is best used in unilateral lesions. It requires some judgment to decide whether to induce pneumothorax. It may cause old processes to flare up."

Eloesser does not favor continuous sanitarium treatment. If at the end of a year in a sanitarium the patient has not learned what to do and what not to do, no benefit is derived from prolonging such treatment.

Adhesions are the main obstacles to pneumothorax, and it is through cases with adhesions that surgery of the chest originated.

Thoracoplasty, like artificial pneumothorax, has become well established as a valuable method of treating certain forms of chiefly unilateral pulmonary tuberculosis.

The patients with one good lung and one bad lung, and in whom pneumothorax cannot be done, are suitable for surgical therapy.

The lung is limited in its shrinkage. There are three

structures which may resist the shrinkage. The mediastinum is quite movable and may yield by itself. The diaphragm is fairly movable, but the rib-cage is rigid. The ribs do not move. It is hard to get the pleura from the chest wall and lungs. To procure a maximum collapse a great deal of the rib-cage has to be resected. The resistance of the rib-cage is overcome by resection of a small portion of all of the ribs near the spine; take away one inch from each rib, and let the ribs collapse like the shutters of a Venetian blind. The test of a thorough operation is that there is no palpable rib near the spine from the twelfth to the first rib.

Resect all the ribs without shocking the patient too much. Use local anesthesia. The operation may be done in one, two or more stages. It requires surgical judgment whether to do it in one or more stages. After operation place the patient on the bad side until union has taken place—about six weeks to two months.

Thoracoplasty is indicated in patients who have been in a sanitarium for a long time and did not get well; patients who will not get well or will die. Another method is to compress the lung by raising the diaphragm, which is paralyzed and allowed to rise by resection or severing the phrenic nerve above the clavicle. Phrenectomy is of little value, alone it is usually insufficient, but often gives a clue as how the better lung behaves, and thus aids in deciding whether thoracoplasty should be done.

The doctor showed slides to illustrate the work he has done on patients. A rough estimate of the results obtained in patients amenable to surgical therapy is: cure, one-third; improvement, one-third; and in cases where the course of the disease was uninfluenced and death ensued, one-third. The one-third of cured patients and one-third benefited may be considered clear gain. By cured, the doctor understands a patient free of sputum and tubercle bacilli, fever-free and working. The one-third that failed to recover have not been harmed, as they would have died had surgical intervention not been attempted. Surgical intervention does not increase the patient's dependence upon doctors; the patient is not tied to a physician any more than the patient in a sanitarium or one undergoing treatment by pneumothorax or any other form of treatment.

Thoracoplasty has definitely established its value, when compression of a tubercular lung is desirable, but unattainable owing to pleural adhesions. The operation allows the chest wall to fall in and compress the diseased lung, putting the lung at rest and emptying the lung of abscesses and toxic substances. The results are often remarkable.

The members asked many questions which the doctor answered in a very instructive way.

There being no further business to be brought before the society the meeting adjourned at 10 p. m.

FRED J. CONZELMANN, *Secretary*.

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### SANTA BARBARA COUNTY

**Santa Barbara County Medical Society**—The annual meeting of the Santa Barbara County Medical Society was held at the University Club on January 10, 1927, with Acting President H. E. Henderson in the chair.

At the dinner preceding the meeting there were present thirty-seven members and thirteen guests, the latter including Dr. Joseph Catton, speaker of the evening, the interns from the hospitals, and the entertainers. Accordion music, intermingled with songs led by Doctors Proffant and Wills, and followed by Doctor Bagby with a story, and "Scotty" with his Scotch songs, entertained the dinner guests.

President Henderson called for a minute of silent prayer in commemoration of our departed president, Doctor Hotchkiss.

The speaker of the evening, Joseph Catton of San Francisco, was then introduced and gave a most interesting talk on "The Doctor Looks at Crime," with a vivid description of sixteen case reports.

At the conclusion of Doctor Catton's talk the society went into executive session, and the following doctors



were unanimously elected to membership: Henry G. Hanze and W. E. Johnson.

The following were then elected as officers for the ensuing year: H. E. Henderson, president; W. D. Sansum, vice-president; W. H. Eaton, secretary-treasurer; H. G. Hanze of Solvang, first vice-president-at-large; O. C. Jones of Lompoc, second vice-president-at-large.

The president appointed the following censors: F. R. Nuzum (chairman), Henry Ullmann, and Allen Williams.

The delegate and alternate to the state convention, serving for two years, and having been elected at the annual meeting of 1926, Doctor Ullmann, delegate, and Doctor Nuzum, alternate, were held over.

The state dues remaining the same, viz., \$10, it was duly moved, seconded and carried that the local dues remain the same for the ensuing year, viz., \$2.

The treasurer's annual report, showing a balance of \$32.62, was presented and ordered filed.

The following members paid their 1927 dues: W. H. Eaton, J. G. Ware, C. S. Stevens, G. S. Loveren, W. D. Sansum, P. C. Means, Kent Wilson, M. Williams, A. Williams, Benjamin Bakewell, A. Q. Spaulding, F. R. Nuzum, Rexwald Brown.

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary*.

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#### STANISLAUS COUNTY

**Stanislaus County Medical Society**—On January 14, 1927, Thomas Floyd Bell of Oakland addressed the Stanislaus County Medical Society. A very interesting talk was given by Doctor Bell, who brought out many interesting facts in reference to fractures. He explained his ox-bone screws and plates.

After an interesting discussion, twenty-four members were entertained at a banquet at the Hotel Hughson. The officers who were installed following the banquet were, as follows: E. V. Falk, president; E. F. Hagedorn, vice-president; J. W. Morgan, secretary-treasurer; J. A. Cooper, censor for three years; C. E. Pearson, delegate; and E. F. Reamer, alternate.

J. W. MORGAN, *Secretary*.

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#### TULARE COUNTY

**Tulare County Medical Society**—The regular monthly meeting of the Tulare County Medical Society was held at Motley's Café in Visalia. Dinner was served at 6:45 with but eight members present, consisting of the following: Doctors Preston, Ginsburg, Zumwalt, Hicks, Betts, Paine, Gilbert, Campbell.

Meeting was called to order at 8 o'clock by President Betts. The minutes of the last meeting were read and approved.

A communication was read from Dr. Mary R. Butin concerning the re-enactment of the Sheppard-Towner Bill, and the secretary was instructed to write to Doctor Pope, secretary of the State Association, for more information and the name of our representative to telegraph to.

Election of officers was held, and a unanimous ballot cast by the secretary for Elmo Zumwalt as president and J. C. Paine as vice-president. Horace Campbell was re-elected as secretary-treasurer, a unanimous ballot being cast by the president.

John Hicks was elected censor to hold office with Doctors Ginsburg and Preston.

I. H. Betts was elected as delegate, and Elmo Zumwalt as alternate.

Frank Kahn of Visalia was elected to membership subject to approval of the State Society.

B. H. Gilbert's transfer from the Siskiyou County Society to this society was accepted.

Copy of a letter from the Fresno County Society was read concerning the proposed Physicians and Surgeons Insurance Corporation, as well as a copy of the report of their own committee on industrial insurance. The secretary was instructed to get similar copies from the Fresno society if possible, and mail them to each of our members.

The secretary was also instructed to write to the county

librarian for a mailing list of all libraries of the county, and to then write to these libraries concerning their willingness to keep up their subscription to *Hygeia*, with which our society presented them last year.

Our next meeting was planned for the middle of January.

Meeting adjourned at 10 o'clock.

H. G. CAMPBELL, *Secretary*.

#### CHANGES IN MEMBERSHIP

**Deaths**—Barbera, Eugene Howard. Died at Oakland, December 27, 1926, age 36. Graduate of the Oakland College of Medicine and Surgery, 1918 and licensed in California the same year. Doctor Barbera was a member of the Alameda County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Johnson, Abel William. Died at San Francisco, January 6, 1927, age 47. Graduate of Rush Medical College, Illinois, 1901. Licensed in California in 1904. Doctor Johnson was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

O'Brien, John Thomas. Died at San Francisco, December 27, 1926, age 63. Graduate of the University of California Medical School, 1896 and licensed in California the same year. Doctor O'Brien was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

#### OBITUARY



P. C. REMONDINO  
1847-1926

On December 10, 1926, one of the most picturesque figures associated with the early general and medical history of San Diego passed on. Peter Charles Remondino, born in Turino, Italy, February 10, 1846, came to this country with his father in 1854, finally locating in Wisconsin, where he lived for several years. He began his medical studies at the age of 16 in the office of Dr. Francis H. Milligan of Wabasha, Wisconsin, who soon afterward was called to service in the Civil War. Early in 1863 he matriculated in Jefferson Medical College in Phila-

delphia. There he had exceptional opportunity for study, as the wounded were transferred from the front in great numbers to that city for treatment. In 1864 he volunteered his services as a medical cadet and was assigned to duty, first at Annapolis and later near Petersburg, Virginia. After seeing some service he was sent back to complete his studies, and was appointed acting assistant surgeon in the Union army immediately after receiving his degree. During the service which followed he acquired malaria in grave form and was discharged.

Several years in practice in Minnesota failed to cure this disease, and he decided to make a tour of Europe. There, when Napoleon III fell after Sedan, he offered his services to the French Republic, was commissioned captain in the medical corps and served till the end of the war, having many adventures and once being captured by the Germans, from whom he managed to escape. About six years ago he received from the government of France the much coveted Medaille Militaire "for heroic service."

After the Franco-Prussian War he traveled extensively over Europe, continuing his medical studies and making observations on climatology, in which line he was later to establish an enviable reputation. Returning to Wisconsin he found that he must still fight his old enemy, malaria, so he migrated to San Diego in 1873. "Rem," as we all affectionately dubbed him, used to show with much satisfaction as an advertisement of what the San Diego climate would do for a man a photograph taken when he arrived in San Diego. He then weighed 120 pounds and looked like a very advanced tubercular case. When he showed this picture to the writer he weighed about 200 and was distinctly rotund. Always a successful and popular physician and surgeon, he served the city and county in various public offices, and was at various times vice-president of the State Medical Society, president of the Southern California Medical Society and of the County Medical Society.

Doctor Remondino was a true bibliophile and an omnivorous reader. His memory was wonderfully accurate, and he could quote at length from almost any book he had ever read. He managed to accumulate probably the largest private medical library ever gotten together on this coast. In addition to this he had also one of the most extensive and exhaustive libraries on Napoleon I and on French history in the country. He used to show us many volumes bound in the old pigskin more familiar to the older medical practitioners than to the younger generation, all marked "Rem" across the back, remarking that every one of them represented a time when he went hungry to buy them.

His contributions to medical and lay literature were very extensive, many of them rendered authoritative by full quotations from the mass of information locked up in his great library. Probably his largest contributions were along climatological lines, but his book on Circumcision was undoubtedly most widely read, both by the profession and the laity. This work contained the results of much delving into the history of Phallic worship and was enlivened by anecdotes from personal experience and from the older writers which rendered it interesting to most readers. He was firmly convinced that all mankind would profit by a universal extension of the Jewish custom, and he performed the operation so generally that we came to know it locally as Remondino's operation.

For about two years he edited the *National Popular Review*, a monthly journal of preventive medicine published in Chicago, although he did his work in San Diego. In writing he was given to long sentences which were, however, never involved, and he had a gift for the choice of appropriate words which gave his satire, in which he indulged largely, a sting peculiarly his own. It so happened that Dr. T. A. Davis, probably our best-loved practitioner of medicine in San Diego, had died shortly before the acceptance of the editorship of the *Review*. Doctor Remondino had conceived the idea that Doctor Davis had been shabbily treated by a brother practitioner, whom he dubbed "The Prodigy." So he devoted at least one editorial a month to excoriating "The Prodigy," whom he had detected in some errors of diagnosis, at least one of which had resulted fatally. Both the laity and the profession read these really artistic editorials with much

gusto, whatever they may have thought of the righteousness of Doctor Remondino's contention.

Doctor Remondino's *magnum opus* is a history of medicine from the earliest times, to which he has devoted much of his time for the past forty-five years. He left the work unfinished, but with notes and the accumulation of data which would make its completion possible in comparatively a short time should it seem advisable. The extent of his reading and his industry may be gauged by the fact that he calculated that the completed work would fill seventy volumes, certainly the most extensive work of the kind ever undertaken. Most of the data for the work is contained in Doctor Remondino's private library. The card index which he has prepared as the work grew now fills five large filing cases. The plan was to treat the history of medicine both topically and chronologically so that a cross-reference index would put at the disposal of students the whole of any subject studied almost at a glance.

Possibly as a forerunner of this work, or as a result of these studies, Doctor Remondino built up a very extensive collection of arms, it being almost complete in exemplars of every form of firearm ever used in United States forces. He was also a lover of, and a patron of art, and accumulated a collection of paintings of much value. Aside from medicine he found time to write extensively on Napoleon I and on art.

Coming to San Diego at so early a date, Doctor Remondino soon acquired a very large practice, which he held as long as he was physically able to attend to it. It is a curious commentary on the methods of those early days that When Dr. T. L. Magee, who is still actively practicing medicine at the age of 90 and attending to his duties as secretary of the local United States Pension Board, came to San Diego in the early eighties, he was waited on by one of the three regular practitioners who had corralled about all of the local practice with the warning that the field was fully covered and that it would be much healthier and more agreeable for him to hunt another abiding place.

Doctor Remondino was always of a happy disposition so far as we who associated with him could discern, and his pet admonition to all patients "keep cheerful" came to be a byword not only in San Diego, but far up the state. He was almost universally popular, and his death has left a gap in the old guard which is keenly felt. He continued in active practice until about two years ago, when a slight cerebral hemorrhage and complicating cardiac trouble forced him to bed, which he was never able to leave. Even then his mind cleared perfectly, and we always found him with his table piled high with books and continuing his literary work unremittently.

FRED BAKER.

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**Lateral Views of Heart and Aorta**—Samuel Brown and H. B. Weiss, Cincinnati (*Journal A. M. A.*), have made a study of the heart and aorta and their relationship to the thorax in the lateral view. It appears that the position of the heart in the lateral view of the thorax is oblique. The configuration of the heart shadow is oval. Changes in the volume of the heart and of the individual chambers can be recognized. The heart is located in the anterior half of the thorax. There are two transparent triangles due to lung tissue, one situated in front and one in the back of the heart. There is definite relationship of the heart to the aorta, and of the heart and aorta to the thorax. Under normal conditions, the posterior border of the heart does not touch the descending portion of the aorta unless the heart is markedly enlarged. There is a definite relationship between the descending portion of the aorta and spine. Under normal conditions the descending portion is usually found in front of the anterior surface of the dorsal spine. In dilation or displacement, the aorta is found to overlap the bodies of the vertebrae with varying degrees. Also under normal conditions there is a constant relationship between the ascending portion of the aorta and sternum by the presence of the A-S transparent triangle. Alterations of this triangle will depend on the degree of dilation of the ascending portion of the aorta.

## UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President  
E. H. SMITH, Ogden.....President-Elect  
FRANK B. STEELE, Salt Lake.....Secretary  
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....Associate Editor for Utah

### COOPERATION

Never more than now, when none save only a superman surely could aspire to completely "knowing his onions" in this medical world of ours which has so rapidly expanded its borders to an almost empirical degree, has the need for cooperation between the workmen of the medical field been more manifestly stressed. Never has the need of specialization been more justified or the need of friendly and helpful cooperation between each group of each special field been more indicated both for the good of the patient and for the good of the profession at large.

Today the handling of any patient beyond those in each class, or of the simplest nature, comes more and more to smack of the fulfilling of a contract involving the skilled knowledge of craftsmen of various sorts. We don't mean that one with kidney trouble necessarily needs a plumber or the one with intestinal diseases a subway engineer. But we do mean that what is very, very often needed is skilled "piece work" in order that the end result may be complete.

And here is where what we mean by cooperation comes into the picture, or *should*. To our mind, that physician who first serves the patient stands very much in the position of the man who takes a contract to finish a job. His is the general conception of what should be done, and his is the contract really. But he may let subcontracts to enable him to have certain details attended to by specially trained men. And here is exactly where the specialist comes in. His the task of taking the referred patient and not only giving him the special attention needed, but of coordinating his efforts with those of the referring physician and of safeguarding the interests of that man by seeing that the patient is made to feel that his physician has worked for his best interests in calling in special help for a special purpose, and seeing also that the patient returns to the referring physician so soon as the special need or emergency has been met.

This to our mind constitutes a high grade and a much-to-be-desired grade of cooperation. The specialist should never forget that in referring a patient to him for his attention the referring physician has paid him the highest possible compliment. Certainly then in common courtesy, if from nothing else, he owes him a return in so conducting himself as to merit his continued respect and trust. And certainly the last thing in which he should permit himself to indulge is any criticism to the patient of his doctor's care of him. If there is criticism, which he in his special knowledge feels to be warranted, let him in all fairness and decency take it up with the physician and discuss it with him on a friendly

basis, for the best interests of the two of them, and to the advantage of the patient who has placed his welfare in the hands of both.

If some such basis of mutual seeking for mutual advantage could be built up we cannot escape the feeling that both the profession as a whole and those suffering individuals whom they must necessarily handle would profit in a degree untold. And we cannot help but feel that we are marching steadily toward just this ideal, or a great and gratifying joy that this should be the truth.

### A THING OF BEAUTY

January first marked the official opening of the new Medical Arts Building on South Temple Street. In a sense this is an epochal date. Not only is this the first strictly professional office building in Salt Lake City, but also if, as has been so often said, "a thing of beauty is a joy forever," then certainly the new Medical Arts should prove a huge success.

As one who has been privileged to become one of its tenants I have been struck from the very first by the spirit of friendship and good fellowship and courtesy which seems to hang about the place. Moving-in day was very much like a holiday picnic for a bunch of kids. Everybody was on his toes. Everything was more or less scrambled of course. Things weren't clicking just as smoothly as they might have. Here and there a fuse burned out, here and there some overenthusiastic plumber turned off the water just when somebody wanted to use a wash bowl, but nobody cared—they just laughed. They'd tied a can on the grouch. It was all in the day's work. They were in a sort of celebration move—kids with a new toy, if you can see the picture.

And then the visiting started. Everybody was running into everybody's suite. Everybody was looking over everybody else. Everybody was shaking hands and saying a cordial word. In fact, as the society writers put it, "an enjoyable time was had by all," not merely figuratively, but in actual fact.

And so the beautiful new structure was given a good send-off, because there actually is a sort of personality about buildings even as about folks. And if an edifice such as this can be sent off tuned, as it were, to this happy frame of mind, then surely that same spirit of cordiality should continue to dominate its subsequent vibration—should militate to its future success. The medical world of Utah and Salt Lake may well be proud of this first structure of its class within the state.

**Utah News**—The annual election of the Holy Cross Hospital Clinical Association held in December resulted in the selection of Sol G. Kahn, president, and J. U. Giesy, secretary for the ensuing year. An informal talk-fest and smoker followed the regular business of the evening. Adjournment was to January 17, at which time the program consisted of a "Review of Current Medical Literature" by Fred L. Peterson, and a report of "Two Cases of Edema" by Fuller Bailey.

We note with pleasure and congratulations the return of W. R. Tyndale from the coast with his bride. The marriage ceremony was performed in Los Angeles, after which the newly wed couple spent some time in San Diego. The profession extends its best wishes for the future to Doctor Tyndale and wife.

John Z. Brown and his Committee on Scientific Pro-



gram have begun preliminary work on the arrangement of the program for the next State Association meeting. Tentatively the state meet will be held in June, and it is hoped that a splendid program may be worked out with the cooperation of physicians from various sections of the country who will be coming through Salt Lake at that time.

The officers of the Utah State Association paid an official visit to the Box Elder County Medical Society, upon the invitation of the latter at the regular February meeting.

For the information of all county secretaries who may feel moved by a spirit of cooperation to avail themselves of past invitations to report the proceedings of their societies or any news of medical interest within their medical fields, we wish to announce that the new address of the editorial offices of the Utah section of CALIFORNIA AND WESTERN MEDICINE is: Suite 701-2 Medical Arts Building, Salt Lake City, Utah. We sincerely hope they will give us something to print concerning their local activities within the next few months and then, having got the habit, go right ahead reporting from month to month.

**Salt Lake County Medical Society** (M. M. Critchlow, secretary)—The annual meeting of the society was held at the Commercial Club, Salt Lake City, Utah, December 13, 1926, called to order at 8:10 p. m. by President F. H. Raley. Fifty-five members and four visitors were present.

Minutes of the previous meeting were read and accepted without correction.

President F. H. Raley read a report in which he thanked the members for their cooperation during the year, and made recommendations for the future.

Treasurer's report was read by Joseph E. Jack.

Secretary's report was read by M. M. Critchlow.

A verbal report for the Medico-Legal Committee was given by James P. Kerby.

L. E. Viko read a report for the Community Clinic Committee.

Fred Stauffer read the report of the Building Committee.

Sol C. Kahn read the report of the Committee on Public Health and Legislation.

Report of the Library Committee was read by W. R. Tyndale, who recommended that the dues of the society be raised so that the Library Committee could receive \$5 per year per member.

E. D. Hammond read the report of the Committee on Necrology and paid tribute to George E. Robison, S. H. Pinkerton, and S. H. Allen.

John Z. Brown moved that the society be authorized to reimburse J. P. Kerby for funds paid by him for a banquet. Seconded and carried.

F. K. Root read a report for the Dental Banquet Committee in which he outlined tentative plans for the banquet. R. T. Richards moved that the report be adopted and that the committee be authorized to carry out the plans as outlined. Seconded and carried.

The Chair appointed an Auditing Committee, members of which are: G. N. Pace and T. A. Flood.

Communications were read from Mrs. S. C. Baldwin and the Salvation Army.

The following applications for membership were read: W. L. Smith, W. T. Sheets, and V. Lindsay.

The following officers were unanimously elected to serve during the year 1927:

W. G. Schulte, president; W. F. Beer, vice-president; M. M. Critchlow, secretary; Joseph E. Jack, treasurer. Censor to serve three years: F. H. Raley.

Adjournment at 9:15 p. m., after which an informal smoker and luncheon was held.

A regular meeting of the Salt Lake County Medical Society was held at the Commercial Club, Monday, January 10, 1927, President W. G. Schulte presiding. Thirty-seven members and three visitors were present.

Minutes of the previous meeting were read and accepted without correction.

No clinical cases were presented.

The first paper on the scientific program was entitled "Health Work in the Public School" by Sam G. Paul.

He explained the purposes of the examination of school children, described the usual defects noted, the measures taken for their correction and the beneficial results which follow. He outlined the work carried on in the Pre-School Clinics and stated his views on allowing the physically unfit to enter athletics.

His paper was extremely interesting, and was discussed by Sol G. Kahn, G. N. Curtis, T. B. Beatty, and John Z. Brown.

The second paper was on "Quarantine Regulations" by W. A. Pettitt. He urged the cooperation of the physicians with the Board of Health, stated the present city and state quarantine regulations and made recommendations for changing the regulations especially in some of the minor contagions.

This interesting paper was discussed by T. B. Beatty, Willard Christopherson, A. A. Kerr, William T. Ward, John Z. Brown, G. N. Curtis, and W. F. Beer.

The following men were unanimously elected to membership in the society: Walter T. Sheets, A. Van Lindsay, and W. LeRoy Smith.

Applications for membership were read from the following men: Joseph F. McGregor, O. J. LaBarge, W. Lawrence Montgomery, R. I. Burns, and H. Christopherson.

A communication from the State Dental Association was read.

## NEVADA STATE MEDICAL ASSOCIATION

W. L. SAMUELS, M. D., Reno.....President  
HORACE J. BROWN, M. D., Reno.....Secretary and Associate Editor for Nevada

The President of the Association has appointed the committees for the ensuing year, as follows:

Membership—A. C. Olmsted, P. De M. McLeod, Halle L. Hewetson.

Judicial—M. A. Robison, E. E. Hamer, R. A. Bowdle, C. W. West, W. L. Howell, J. W. Gerow.

Scientific Work and Program—V. A. Muller, H. A. Paradis, William H. Brennen.

Necrology—T. W. Bath, J. E. Worden, D. L. Shaw.

Entertainment—S. K. Morrison, B. H. Caples, D. A. Turner.

Public Health and Education—M. R. Walker, Mary H. Fulstone, W. A. Shaw.

Military Affairs—The president, vice-presidents, and secretary.

Diseases of Eye—Anne De Chenne, J. A. Fuller, J. L. Robinson.

The Council is composed of the following: G. L. Dempsey, W. L. Howell, J. C. Cherry, C. E. Swezy, J. H. Hastings, D. A. Smith, A. Huffaker, P. W. Robinson, Halle L. Hewetson, J. R. Eby, William H. Brennen, G. L. Belanger, J. T. Rees, C. J. Richards, F. M. West, H. L. Dalby, M. J. Rand.

**News Items**—Dr. George R. Smith of Ely has been appointed superintendent of the Nevada State Hospital for mental diseases, succeeding Dr. R. H. Richardson, who resigned in December and has gone to Porto Rico to spend several months.

Dr. S. L. Lee, Carson City, who has for many years been secretary of the State Board of Health, and State Board of Medical Examiners, died at his home in Carson City, January 12, from heart disease, age 82 years. Doctor Lee graduated from the Eclectic Medical Institute at Cincinnati, Ohio, in 1870, came to Nevada the same year and has been in constant practice in Nevada since that time.

John B. McCann, Tonopah, is reported to be suffering from pneumonia.

George L. Servoss, Reno, has been appointed county physician and health officer for Washoe County.

E. E. Hamer, Carson City, has been appointed secre-

tary of the State Board of Health, to succeed S. L. Lee, deceased.

At the December meeting of the Washoe County Medical Society J. A. Fuller of Reno was elected president, B. H. Caples, vice-president, and A. J. Hood, Reno, secretary-treasurer.

**Calcium Chloride and Carbon Dioxide Content of Venous Blood**—The calcium chloride and carbon dioxide content of venous blood in cases of gastroduodenal ulcer treated with alkalis was studied by Sara M. Jordon, Boston (*Journal A. M. A.*), in one hundred cases. Although very large amounts of alkalis were administered over a prolonged period, the patients being under close observation for from six to twelve months, no untoward symptoms were observed. It therefore became a matter of interest to determine to what extent, if at all, the acid-base equilibrium of these patients was disturbed. Forty-one cases of ulcer and ten normal cases were studied over a period of three weeks, the ulcer cases at the beginning of their management according to the Sippy method, the normal persons at their usual activities, and ingesting no alkalis not contained in their usual diet. The diagnosis was made in each case by the history, laboratory and roentgen ray examination after a period of at least three days' observation in the hospital. All the patients made satisfactory clinical progress without signs of alkalemia. In such cases the average level of plasma chloride of venous blood is lower by 23 mg. per hundred cubic centimeters than the normal, and the average variation in individual cases greater. The average level of carbon dioxide content is higher by 2.7 per cent by volume than the normal, and the average variation in individual cases greater. The average level of serum calcium content and the average variation in individual cases is approximately the same as normal. It is suggested by the estimations made that the acid-base equilibrium is at first somewhat disturbed by the influx of alkalis, but within a few days levels of chloride and carbon dioxide content which approach normal are reached, and in the large majority of cases there is no chemical or clinical disturbance due to alkalosis. In the small percentage of cases that show clinical signs of alkalemia the carbon dioxide content shows a marked rise; the calcium content tends to rise, and the plasma chloride to diminish. The level of carbon dioxide content at which symptoms appeared in these cases is 70 per cent by volume (a combining power of approximately 80). The possible occurrence of alkalemia, with onset as late as several months after the beginning of treatment, makes it necessary to keep patients who are using alkalis under observation. It is suggested that a minimum dosage of alkalis necessary for neutralization be established in each case.

**Fractures of Ankle Joint and of Lower End of Tibia and Fibula**—Edgar Lortington Gilcreest, San Francisco (*Journal A. M. A.*), reviews the fundamental principles to be kept in mind in the treatment of fractures of the ankle joint and of the lower end of the tibia and fibula, and describes the method of treatment to be used in the various types of fractures in this region. He says that the aim of all therapy should be to expedite complete recovery of function. The chief requisite for good healing and satisfactory function in fractures always has been, still is, and always will be, early and exact reduction. Active and passive movements of small amplitude of the knee and ankle must be begun without much delay. The patient's mind should be focused on the joint and muscles, and he will thereby tone up the leg by sending down voluntary nerve impulses. Heat and gentle massage can do nothing but good. One should not overlook protecting the fracture for a few weeks when the patient begins to walk and to maintain the inversion of the foot. Consolidation is often not complete when it is thought to be, and protection at this time will prevent shortening. The causes of unsatisfactory results of fracture treatment, particularly those of the lower end of the tibia, are that too little attention is still given to the consideration of the anatomy and physiology of the part.

## NEWS

**California Medical Association—1927 Meeting, Los Angeles Biltmore, April 25 to 28**—The local committee of arrangements for the Los Angeles meeting of the California Medical Association, which will be held at Los Angeles commencing Monday, April 25, through Thursday, April 28, inclusive, is actively at work on the general arrangements and on the entertainment program.

The local committee consists of William Duffield (chairman), William H. Kiger, Harlan Shoemaker, Albert Soiland, Wayland Morrison, and George H. Kress.

Ex-officio members are W. T. McArthur, president of the California Medical Association, and Clarence Toland, president of the Los Angeles County Medical Association.

President McArthur reported upon correspondence with leading physicians and surgeons in the East, several of whom it is hoped to have present at this meeting. It is aimed to have the general meetings of great interest to all, and the notables whom it is desired to bring to Los Angeles should be an increased attraction for all members to attend.

The scientific exhibit will be cared for by a subcommittee of which William H. Kiger will be the head. Kiger also reported upon the halls for the different sections of the society.

The chairman of the subcommittee on finances is Wayland Morrison.

Entertainment features will be handled by a committee of which George H. Kress is the head.

The entertainment of the visiting ladies will be looked after by a women's committee to be announced later, with Mrs. W. T. McArthur as chairman.

The commercial exhibit will work through a special subcommittee consisting of William R. Molony, Harry Martin, and James M. Conerty.

Publicity will be handled by William Duffield and George H. Kress.

President W. T. McArthur announces that he will give a cup to the winning physician in the golf tournament. He also announces that he will give prizes to the best dancers at the annual dinner and ball.

The Los Angeles committee, acting in the name of the Los Angeles County Medical Association, will make a special endeavor to have this meeting one that will be long remembered by the members of the California Medical Association. The members of the committee are using their best efforts to give the visiting members the best of comfort and entertainment, and it is hoped that a large number of the members of the State Association will avail themselves of this special invitation to visit Los Angeles, which is now a city of 1,260,000, and which will probably be a metropolitan center of 2,000,000 or more before another meeting of the California Medical Association convenes in Los Angeles.

**University of California Medical School News**—Professor Henri Fredericq of the University of Liege will be in the United States during the first four months of 1927 as a visiting professor from Belgium under the auspices of the C. R. B. Educational Foundation. Professor Fredericq is head of the Department of Physiology at the University of Liege. His biography is, as follows:

1887: Born at Liege, Belgium; 1908: Aide Preparateur in Physiology, Liege; 1912: Doctor of Medicine, Liege, Assistant in Physiology; 1914-19: Enlisted in the Medical Corps of the Belgian Army, service in a fort at Liege, on the Yser front, at the Ocean Hospital with Dr. A. Depage, Cabour Hospital with Dr. P. Nolf, and the Military Hospital at Liege. Served in the army for the duration of the war; 1919: Charge de Cours, University of Ghent; 1920: Professor, University of Ghent; 1921: Professor of Physiology, University of Liege; director of the Institute of Physiology, Liege.

Doctor Fredericq will deliver the following lectures at the University of California Medical School during February:

On February 14 and 15, Doctor Fredericq will give lectures at the University of California in Berkeley, under

the auspices of the Department of Physiology of the Medical School. These lectures will be on the subject of "The Chronaxy."

On February 16, Doctor Fredericq will deliver a lecture at the University of California Medical School in San Francisco, in Toland Hall, University Hospital, at 11 a. m., on the subject of "Interpretation of the Deflections of the Physiological Electrocardiogram." This lecture will be open to the public.

On the evening of February 16, Professor Fredericq will give a lecture before the University of California Chapter of Sigma Xi, at the University of California in Berkeley, on the subject of "Humoral Transmission of Nervous Action."

**Death of Dr. Walter I. Baldwin**—Walter I. Baldwin, clinical professor of orthopedic surgery at the University of California Medical School, died on November 28, 1926, in Santa Barbara, after a long-continued illness.

Doctor Baldwin received the degree of Bachelor of Science from the University of California in 1907 and that of Doctor of Medicine in 1911. Immediately upon graduation he entered the University of California Hospital as an intern. In 1913 he joined the faculty as an assistant in orthopedic surgery and was promoted to the grade of instructor in 1915. He was raised to the grade of assistant clinical professor of orthopedic surgery in 1920, and to that of clinical professor in 1925.

In addition, he was an intern in orthopedic surgery at the Massachusetts General Hospital in 1912. During the World War he was consulting orthopedic surgeon, American Expeditionary Forces, and later, senior resident orthopedic surgeon, Edinburgh War Hospital.

He was consulting orthopedic surgeon, Southern Pacific Hospital, from 1922 until his death and also surgeon-in-chief of the Shriners' Hospital for Crippled Children from 1923 until his death. He was a member of the American Orthopedic Association.

**Stanford University School of Medicine Introduces Departmental Examinations**—"By action of the faculty," writes Dean William Ophüls, "it was decided that in the Medical School at San Francisco departmental examinations be substituted for individual course examinations. Each departmental head is to be required to make arrangements for the keeping of records of the attendance of students at the individual courses in his department and of such records of the progress of students in the individual courses as may seem desirable. These records shall be kept on file in the office of each departmental head, and from them reports on the attendance of the students in the individual courses shall be made to the dean's office whenever desired.

"If a student wishes to transfer to another medical school, he shall be entitled to an examination in any required course completed that has not been covered by a departmental examination.

"The character and scope of the departmental examinations shall be determined by the departmental faculties. In arriving at the final grade in departmental examinations the character of the work of the student in individual courses may be taken into account.

"Under the new rule of the faculty formal examinations shall be held, as follows:

At the end of the second year: medicine, introductory; surgery, introductory; obstetrics and gynecology, introductory.

At the end of the eighth quarter: public health and preventive medicine; pharmacology.

At the end of the third year: pathology; internal medicine; surgery; gynecology.

At the end of the tenth quarter: obstetrics.

At the end of the fourth year: medicine and medical specialties, including pediatrics, neuropsychiatry, dermatology, radiology, physiotherapy; surgery and surgical specialties, including orthopedic surgery, genitourinary surgery, otorhinolaryngology, ophthalmology.

"The examinations at the end of the fourth year should be of a very general nature and should cover all aspects of a given problem presented.

"Nothing in these regulations shall be construed as preventing any instructor to give such tests in regard to the progress of the students in his courses as he may think necessary. These tests, however, must be arranged for during the regular hours of the course."

The Pacific Coast Surgical Association will hold its second annual meeting at Del Monte, Friday and Saturday, February 25 and 26. Officers: Stanley Stillman, San Francisco, president; Ernst A. Sommer, Portland, first vice-president; W. D. Kirkpatrick, Bellingham, Washington, second vice-president; and Edgar L. Gilcreest, San Francisco, secretary and treasurer.

#### PROGRAM

Friday morning, 9 o'clock—President's address, Stanley Stillman, San Francisco; "Diverticulum of the Esophagus," C. T. Sturgeon, Los Angeles; "Treatment of Acute Perforations in Peptic Ulcer," A. O. Loe, Seattle; "Congenital Pyloric Stenosis," Alanson Weeks, San Francisco; "Invagination Ileus in Polyposis of Small Intestine," Rexwald Brown, Santa Barbara.

Friday afternoon—Golf and motoring.

Friday evening, 8 o'clock—"An Old Problem," Ernest F. Tucker, Portland; "Inductive Reasoning in Medicine," Charles E. Phillips, Los Angeles; "The Advantages of a Complete Thyroidectomy," Phillip K. Gilman, San Francisco; "Adenomata of the Thyroid," Wallace I. Terry, San Francisco; "Iodin in the Management of the Goiter Patient," Clarence G. Toland, Los Angeles.

Saturday morning, 9 o'clock—Executive session; "Dermoid Cyst of the Mediastinum," Samuel L. Caldbick, Everett, Washington; "The Mechanical Factor in the Causation of Choked Disc in Intracranial Lesions," George W. Swift, Seattle; "The Differential Diagnosis of Abdominal Pain in Lesions of the Kidneys and Ureters," Frank Hinman, San Francisco.

Saturday afternoon—Golf and motoring.

Saturday evening, 7 o'clock—President's dinner.

Clinics will be held in San Francisco two days previous to the Del Monte meeting.

For further information address Edgar L. Gilcreest, Fitzhugh Building, San Francisco.

At the annual dinner of the Southern California Medical Golf Association the following officers were re-elected for the ensuing year: W. H. Kiger, president; Clarence G. Toland, vice-president; and C. Hiram Weaver, secretary and treasurer.

Sixty-four members participated in the golf tournament preceding the dinner. Wallace Dodge was the low gross winner in Class A with an 85. J. W. Crossan took the low net prize with 89-14-75. In Class B the low gross winner was E. P. Clark with 92, and the low net victor was H. W. Spiers with 102-24-78. A special prize offered to the player with the most "sevens" on his card was taken by Clarence G. Toland, who had eight of them.

The yearly trophies awarded the winners were presented by Kiger, Toland, Waddell, and the Horton and Converse Pharmacy.

The American College of Physicians will hold its eleventh annual clinical session in Cleveland, Ohio, February 21-25, 1927. Alfred Stengel of Philadelphia is president and John Phillips of Cleveland is the chairman of the Program Committee. The program will be of unusual interest to physicians (including neurologists, pediatricians, roentgenologists, pathologists, dermatologists, psychiatrists, and others engaged in the field of clinical medicine). The Cleveland hospitals and the Western Reserve University will cooperate with the College in the presentation of the program.

During the mornings there will be clinics and demonstrations at the various hospitals and in the laboratories of the Western Reserve University. During the afternoons papers on various medical topics will be delivered by local members of the profession and by members of the College from other parts of the United States and Canada. During the evenings there will be formal addresses by distinguished guests and by the president or other representatives of the College.



The American College of Physicians is a national organization in which physicians may find a common meeting ground for discussion of the special problems that concern them and through which the interests of medicine may have proper representation. Membership in this organization is limited to those in the field of medicine, as distinguished from surgery. While it is not a limited national society of specialists (mostly prominent medical teachers), it is not co-ordinal with large national or sectional organizations of physicians requiring no special professional qualifications. Its standards are high and many men of distinction in the profession are numbered among its members.

An invitation has been extended by the College to all qualified physicians and laboratory workers to attend the Cleveland clinical session. An attendance in excess of 1500 is anticipated.

The Sofie A. Nordoff-Jung Prize for the best contribution in Cancer Research during the past year has been awarded to Dr. Otto Warburg, director of the Department of Biology of the Kaiser Wilhelm Institute, Berlin-Dahlem.

The novel methods of investigation developed by Professor Warburg have opened reliable channels for tests on the metabolism of surviving tissues under varying conditions. With a singular predetermination he has made available an abundance of valuable material through comparative experimentations on the processes of disintegration and oxydation of normal tissues, and neoplasms. His biochemical attack on the cancer problem presages the most promising results.

Professors Borst, Doederlein, von Romberg, and Sauerbruch, all of the University of Munich, form the awarding commission.

**Popularizing Medical Information**—The how, why, what and by whom of popular medical information has been made a nation-wide controversy of the first magnitude and importance in England, as is indicated by the following abstracts prepared by Ivy Lee and associates from a few leading English newspapers. These discussions are passed on to our readers because the solution of the problem lies in the hands of physicians and their organizations. It may not be ignored, unwisely handled nor misdirected by the physicians of the United States.

The Manchester Guardian reviews an address by Sir Thomas Horder on who considered the question under the heading: Is it desirable that we should give the individual citizen information on health matters, and, if so, what sort of information, who should be responsible for it, and through what medium should it be given?

As to the first point, he said there seemed to be a consensus of opinion that it was desirable. The second point he found more difficult. "That," he continued, "may be because I am not an apostle of any doctrine that I have an itch to preach, and because I know from experience that health is an adjustment of so many factors, having quite different values in different individuals, that it seems to be entirely unlikely that particular prescriptions can ever be universally useful."

"I therefore think that maxims drawn up for guidance in personal hygiene should be few and brief, embodying general principles and avoiding particulars. How can they deal in particulars with any hope of success, since they go to all and sundry, to the young and to the old, to the fat and to the lean, to the blonde and to the brunette, to the tall and to the short, to the phlegmatic and to the sanguine, to the asthenic and to the sthenic?"

"I do not think instructions to the public on health matters should aim at embodying the latest theories in pathology or in therapeutics. Rather do I think that such instruction should always be kept high and dry from theories, however attractive. This requires an exercise of forbearance not possible with all of us—a reflection which leads me naturally to my next question."

"For the news-I suggest that the medical journalist and 'our medical correspondent,' who is, of course, chosen because he is a journalist, are the best persons to do the writing. But I think the interest of the public is best served by all articles and paragraphs, and books also, being controlled by experts whenever they deal with actual diseases and their treatments."

"The experts at the Ministry of Health would, I am sure, be willing to 'vet.' such articles. But the public is chary of Government departments and officials in things like these. It should not be difficult to arrange some even more representative body, the names of whose personnel might be published from time to time, so as to assure the public that it was a body competent for the purpose in hand."

"Laymen should, I think, sit on this committee. I

favor the presence of laymen on all councils and committees that have to do with health questions and the public. . . .

"When we come to actual matters of health instruction—the preparation of maxims, for example—I am quite sure that control by some responsible body is essential to the public interest. The laymen would naturally leave the technical points to their medical colleagues. . . ."

Referring to the question through what channels and by what methods should health education be given, Sir T. Horder said the lay press was certainly the most powerful medium we possessed for instructing the public on health matters. They must do their utmost to secure the cooperation of the proprietors and editors of those journals that influence the thinking public.

"What we should like the editor to do is to pick the same sort of man that he picks when he is ill, because we must remember—and the fact is pertinent—that the editor's doctor is not a publicist, nor does he hold peculiar views. He is just an ordinary practitioner like ourselves; he does not know the exact cause of cancer. Indeed, he is the sort of man the conscientious editor—for such persons exist—rings up when he wants to be assured that 'the eminent physician,' or 'surgeon' or his own 'medical correspondent' is not trying the reader's credulity too far."

"The important point was that there would be the chance of an authoritative 'Health column,' reading of which the thinking subscriber to the journal might know that what it contained was endorsed by the censoring body. But the lay press must not clamor for the signed article by men in active practice. They would get it; they did get it; but they should leave it to the good taste of the doctor to refrain if he chose."

The same newspaper in a later issue says:

"Reference to the question of doctors engaging in public health propaganda was made recently at the Royal Institute of Public Health by Dr. E. G. Graham Little, M. P."

"There is a very important movement going," said Doctor Little, "to educate the public in such problems, and I have myself taken a hand upon the methods by which this education should be conducted. I have been quite wrongly represented as opposing the movement. What I have opposed, and what I intend to continue opposing, is the slipshod, ineffective and sometimes even ludicrous attempts to shower upon the public the mere crumbs from the rich table of medical science."

"I submit that to be of any value, the knowledge thus offered should come from real experts in the particular branch of medicine upon which advice is given, but I deprecate the essays in the obvious over the signatures of medical men which disfigure so many of the popular journals of today."

The following paragraphs from the British regulations concerning publicity by the medical profession are from Public Opinion, September 17, 1926.

"8. It is commonly agreed that channels must be open for discussion between members of the profession for recording the results of research and clinical experience and for bringing to the notice of other members books published and facilities for treatment offered."

"The recognized channels are medical societies, medical periodicals and works primarily intended for the medical profession."

"9. It is the recognized duty and right of a medical man to take his share as a citizen in public life, but there is no reason why this should involve any advertisement of himself as a doctor, and, with due care, improper advertisement can be avoided."

"10. Publicity is rightly allowed to medical men not in actual practice of their profession since they cannot be regarded as using this publicity for the purpose of promoting their own professional advantage, and in view of the official position of Medical Officers of Health and other medical men who hold posts in either the public health or other public service, publicity is sometimes not only permissible but necessary for the fulfillment of their official duty. The presumption in all these cases is that publicity is not sought for the individual's own gain. . . ."

"11. The publication of books and the delivery of lectures on semi-medical topics which are of general public interest and require medical knowledge for their proper presentation have been recognized as legitimate, subject to the avoidance of methods which tend to the personal professional advantage of their authors."

"12. From time to time there are discussed in the lay papers topics which have relation both to medical science and policy and to the health and welfare of the public, and it may be legitimate or even advisable that medical practitioners who can speak with authority on the question at issue should contribute to such discussions."

"But practitioners who take this action ought to make it a condition of publication that laudatory editorial comments or headlines relating either to the contributor's professional status or experience shall not be permitted; that his address or photograph shall not be published; and that there shall be no unnecessary display of his medical qualifications and appointments."

"Discussions in the lay press on disputed points of pathology or treatment should be avoided by practitioners; such issues find their appropriate opportunity in the professional societies and the medical journals."

"The doctors are moving," relates the London Spectator. "It is evident that recent criticism of the rules and etiquette of the medical profession has had its effect. Doctors generally are admitting that more use must be made of publicity if we are to have a healthy nation. Half-educated people, and a good many well-educated people who happen to be careless, are unbelievably stupid about what Bacon called the 'regiment of health.' The only

way in which they can be approached and corrected is through the press. Therefore, somehow or other, instruction in how to eat and drink wisely, how to exercise and how to clothe the body, must be conveyed through the newspapers.

"All sensible people desire that the medical profession should keep to its noble tradition of reticence. If it is to retain respect and trust it must never resort to the cheap arts of personal advertisement. It must have strict regulations and customs in this matter, and we for our part shall always be inclined to forgive the doctors if they err on the side of pedantry in making their traditions secure. But it simply cannot be right that the nation should have a much lower standard of health than it might have in order that doctors may flatter themselves that their etiquette is untarnished. There must be something wrong with a system in which that happens."

Two prizes of \$50,000 each have been offered by William Lawrence Saunders of New York for discoveries of the causation, prevention and cure of cancer. The offer was made on December 15, 1926, and will stand for three years. The donor expects to renew it if necessary.

The decision upon which the awards will be made is to be reached by the American Society for the Control of Cancer and approved by the American Medical Association and the American College of Surgeons.

New Saint Joseph's Hospital of San Francisco is now almost entirely silhouetted against the heavens in steel, the last bolts being riveted during these days, as the boxes are built for the reception of the concrete and cement. Never was modern construction more fire or earthquake proof than it is in this seven-story, basement and subbasement "skyscraper," rising at scenic Buena Vista heights, where it will remain, as before, free from noise and smoke and only a few minutes from marts of commerce.

The units already contracted for will provide for nearly 300 beds for patients and the most up-to-date surgery, maternity, laboratory and other departments, as well as a new centralized kitchen, chapel and Sisters' home. The reinforced power house, laundry, and nurses' annex are already being used, and the present patients' rooms are to be maintained, without interference, until all the new units are completed, when the old structures will be demolished. This arrangement enables the entire present capacity to be kept at the disposal of the visiting doctors. The new structure will be completed this year.

Saint Joseph's Hospital staff met January 12, and after reviewing the work of the previous month witnessed a demonstration of a "Prosthetic or Artificial Nose" by Roy Parkinson. The patient had suffered luetic destruction of the nasal bones and septum with cicatricial occlusion of both anterior nares. Restoration consisted in a plastic of the right nasal opening, and extraction of teeth, an "Itco" compound artificial nose riveted to the glasses, and an upper plate with an obturator to fill the cleft in the palate. The cosmetic and functional results were eminently satisfactory.

Dr. Adeline Cereghino Williams read a paper on the "Role of Women in Medicine," showing the general and special aspects of the profession where female doctors had won success. W. T. Cummins spoke on "Hospital Progress, Especially in Laboratories." A. S. Musante presented a case of "Operation Seven Days After Vesical Rupture with Recovery." Uterine fibroids, accompanied by difficulty in micturition, were operated upon and a large tear of the bladder of seven days' duration repaired successfully, although convalescence was stormy. Resolutions were adopted urging the doctors to cooperate in financing the new palatial home of the San Francisco County Medical Society.

The program for February 9 follows:

"A Two-Years' Trip Around the World," F. C. Keck, M.D.

At the Mount Zion Hospital staff conference Louis Clive Jacobs discussed calculi in urological tract illustrated by roentgenograms.

The importance of the subject to the surgeon was emphasized because of the frequency with which patients are subjected to unnecessary laparotomies. This results from a failure to properly investigate the urological tract. Improved methods in roentgenology combined with

cystoscopy and laboratory investigation enable the urologist to be more accurate in his diagnosis than formerly.

From a study of 100 consecutive patients Jacobs concludes that the diagnosis is made by the history, urinary findings, physical examination, ureteral catheter, and x-ray. The greater problem is the treatment, surgical or nonsurgical, and depends on the location, size, accessibility, duration, kidney function, and the constitutional resistance of the individual. Where it is possible to remove a stone without a cutting operation, it is preferable. Two of the patients with vesical calculi were operated on suprapubically because of urethral contraindications to the lithotrite.

Litholapaxy was performed under local anesthesia, one a man of 83 and the other 28 years.

Stone in the ureter in the majority of the patients was removed by intracystoscopic procedure, aided by the ureteral dilators and forceps, facilitated by the injection of 3 per cent novocain nitrate.

Three of the patients had stones encapsulated in the lower ends of the ureters. It was necessary in these to resort to the cutting operation. In patients of this character it is preferable to cut down extraperitoneally, except in stout individuals, with a ureteral stone lying adjacent to the bladder wall when the method of choice is the intraperitoneal route.

The kidney pelvis is the most common location for stone, and pelvolithotomy is the operation of choice.

In about 40 per cent of these patients there is a concomitant pyelohydronephrosis which necessitates nephrectomy.

In bilateral nephrolithiasis, about 10 per cent of renal stones, operation should be performed on the better kidney first, but this is not always practical. In the case of kidney stone associated with constitutional diseases it is inadvisable to attempt removal.

John J. Sampson discussed angina pectoris. The nature and cause of this heart pain has been gradually clarified since Heberden first described it. Sir Clifford Albutt laid much stress on the aortic cause of angina, but White, Osler, Dock, and others have caused us to recognize certain types and correlate clinical findings with the pathological changes.

First. The classical aortic type of Heberden and Albutt, with rather sharp precordial pain produced by exertion and generally radiating down the left arm.

Second. The coronary type of pain, generally a crushing or pressure pain in the precordium or epigastrium with more variable type of radiation and frequently associated with congestive heart failure. It is produced not only with exertion, but also with nervous strain and exposure to cold.

Third. The lancinating, transient type of precordial pain with left arm radiation generally, occurring in those individuals with somewhat unstable nervous constitutions.

Fourth. The dull precordial ache of myocardial fatigue generally associated with dyspnoea and palpitation of congestive heart failure.

All these types are definitely associated with organic heart disease and are relieved by nitrites, if only transiently. Noncardiac precordial pain, frequently classified as pseudoangina, must be excluded. Such exclusion is ordinarily simple to obtain, but occasionally we are forced to use laboratory methods to assist us in diagnosing the presence of organic cardiac disturbances.

### BITTER SWEETS

By JOHN J. GAYNOR, M.D.  
(Dedicated to Colonel Ryder)

The beautiful flapper, the joy of the age,  
A stimulus is to the hankering sage,  
Who, neuter in gender, recalling the tune,  
Regrets he was born a cycle too soon.  
His bitter-sweet longings, his wish to enjoy,  
Remains with him still; man is always a boy.  
To match present with past, the gudgeon demands  
A new implantation of endocrine glands,  
And a stimulant diet, protein-free,  
Of lettuce, oatmeal, bearing vitamin E.  
But alas and alack! the zip of the boon,  
Is as passé as a third honeymoon!

## CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, Secretary

According to the Santa Ana Register of December 14, 1926, "Rex H. W. Albrectondare, once nicknamed 'The Peapod Scientist' or 'Alfalfa Doctor' by jocular reporters because of his dietetic theories, . . . recently reported that he would have some startling and sensational disclosures to make at the time of his trial of a suit filed against him in Los Angeles County by Mrs. Jenny McFadden and her daughter, who seek to recover \$37,000 representing alleged loans to him. (Former entries "News Items," June, 1925, and March, 1926.)

A fine of \$100 was imposed upon Mrs. Mary Aston, who pleaded guilty to a violation of the Medical Practice Act, by Superior Judge T. W. Harris in Oakland.—San Francisco Chronicle, January 11, 1927.

Attorney-General Webb recently handed down an opinion that if an eastern firm is selling "ready-to-wear" glasses in California, it is violating the law. The opinion is based on the alleged procedure of representatives who are trying to sell glasses by fitting prospective customers and who later send the glasses by mail from the manufacturer. "The California Optometry Law is designed to protect would-be customers from the evil of harmful fitting glasses."

The 1926 Annual Report of the Board of Medical Examiners urges legislation to prohibit the use of poisons by beauty specialists, etc., in so-called face-peeling operations, citing several deaths in California which have resulted from the absorption of poisons during such procedure. Senate Bill 61 introduced in the present legislature proposes to create a board of cosmetology with power to license those engaged in the various branches of beauty specialties, etc., but does not prohibit the use of poisons in local applications.

Following the death of Sallie Lytton, alleged to have been due to a strong bichloride of mercury face-peel preparation used by her, several individuals were arrested in Los Angeles on a charge of violation of the State Poison Law.

The Los Angeles Examiner of January 11, 1927, relates that a charge of violation of the State Poison Law filed against Fannie Briggs Carr and P. G. Hughes, who were accused of selling a face bleach lotion containing bichloride of mercury, was dismissed, it being stipulated that the Fannie Briggs Carr Corporation pleaded guilty through their attorney, which resulted in a fine of \$250 being imposed. It is also related that Virginia Bates and Della Nell Lucas pleaded guilty to similar charges and paid fines of \$25 each.

According to the San Francisco Examiner of January 12, 1927, Percy Purviance, president of the Berkeley Chiropractic College, has renewed his fight against the Chiropractic Board by obtaining an order to show cause why said board should not be punished for contempt of court. "Last March Judge Murasky signed an injunction forbidding the board to investigate the operations or character of the Berkeley school. Purviance claims that this injunction has been violated."

As a result of a petition filed in the California Supreme Court, a ruling is in prospect which will determine the powers of the State Board of Chiropractic Examiners in the revocation of licenses. The petition was filed by C. H. Wood, Los Angeles chiropractor, whose license was revoked by the board November 20. He claims that the act creating the board and endowing it with certain powers, fails to set forth legally its jurisdiction and procedure in revocation hearings. The examiners in revoking Wood's license charged that it had been obtained by "fraud and deception."—Los Angeles Times, December 13, 1926.

The Board of Dental Examiners under date of July 20, 1926, issued a "Report of the Board of Dental Examiners of the State of California" which also contains a complete list of dentists licensed in California.

The Sacramento Union of December 30, 1926, related

the following changes in the personnel of the Board of Medical Examiners: Albert K. Dunlap, M.D., of Sacramento, vice Harry V. Brown, M.D., Glendale, term expired; William Geistweit, Jr., M.D., San Diego, vice John C. Yates, M.D., San Diego, term expired; James L. Maupin, M.D., Fresno, vice Junius B. Harris, M.D., of Sacramento, resigned.

According to the Los Angeles Herald of December 29, 1926, "Dr. Margaret M. E. Dunlap, Ocean Park physician, (was) held for preliminary hearing on a charge of issuing four fictitious checks totaling \$185." The records of the Board of Medical Examiners do not show any doctor by the name of Margaret M. E. Dunlap licensed to practice in this state.

Recent reports relate the reappointment of Edward F. Glaeser, M.D., of San Francisco, member of the State Board of Health, vice self, term expired.

Recent reports from Visalia relate the dismissal of the I-on-a-co representatives in that vicinity charged with violation of the State Medical Practice Act.

"The State Supreme Court Saturday denied application for a writ of habeas corpus made by attorneys for Dr. F. K. Lord of Ceres, convicted of a misdemeanor charge of prescribing more than the legal daily allotment of narcotics to a drug addict," says an Associated Press dispatch. "Doctor Lord was found guilty after trial in the Justice Court of W. H. Rice. He is out on bail" (Modesto News-Herald, December 12, 1926). (Prior entries in "News Items," March, May, June, July, and December, 1926.)

According to the Sacramento Bee of January 6, 1927, Mrs. Lena Mareck of San Francisco recently appeared before Police Judge Lazarus charged with performing an illegal operation.

L. G. Mein, Chinese herbalist, charged with practicing medicine without a license, entered a plea of guilty before Judge J. C. Needham yesterday and was fined \$200.—Stockton Record, December 30, 1926.

According to the Sacramento Bee of December 23, 1926, nine California doctors have been cited to appear before the Board of Medical Examiners at the next regular meeting, which will open in Los Angeles January 31.

A verdict of acquittal was brought in by the jury yesterday afternoon in the case of Y. Miki, charged with violation of Section 17 of the Medical Practice Act and tried in Superior Court before Judge J. F. Pullen.—Sacramento Union, January 13, 1927.

According to reports, E. J. Moloney of San Francisco was recently reappointed a member of the State Board of Pharmacy, a position which he has held for several years.

A sequel to the death last September of Joseph McManus, 6 years old, while being given an anesthetic on the operating table of M. James McGranaghan, chiropractor of 1171 Market Street, began yesterday, when the latter surrendered to the police on a warrant charging him with violation of the State Medical Practice Statute . . . (San Francisco Chronicle, December 28, 1926). (Prior entries, "News Items," November, 1926.)

The California State Board of Optometry recently issued a year-book giving interesting information regarding the operation of the board and containing a list of those licensed by said board.

A recent "Report on Drug Addiction in California by the State Narcotic Committee," Senator Sanborn Young, chairman, has come from the state printer, and is worthy of close study by the medical profession.

Recent reports relate the appointment of R. E. Conley, Sacramento druggist, as a member of the State Board of Pharmacy, vice E. T. Off of Los Angeles, term expired.

Dr. Paul Sandfort, whose medical and matrimonial affairs have been the basis of extended litigation, pleaded guilty yesterday in Alameda County Superior Court to violating the State Medical Law. The specific charge was practicing without a license. Sanfort was arrested a year



ago on charges sworn out by Mrs. Ange Stanke, Novato matron. Mrs. Stanke said she consulted him in his alleged self-advertised capacity of birth control expert and received a series of treatments. . . . (San Francisco Examiner, January 11, 1927.) (Previous entries "News Items," January, February, and May, 1926.)

Recent reports relate that Dr. A. J. Scott, Jr., of Los Angeles was reappointed a member of the State Board of Health, vice self, term expired.

Dr. William Shore, Ventura physician, was arrested for the second time in twenty-four hours when police raided his garage at 316 Oak Street today and seized ten gallons of alcohol. Shore pleaded guilty to a charge of violating the Wright Act yesterday after the sheriff's deputy raided his place and seized a quantity of booze. He paid a \$500 fine when he appeared before Justice of the Peace Malvern Dimmick . . . —Ventura Star, January 6, 1927.

According to the Hanford Journal of December 8, 1926, A. Silva, charged with violation of the Medical Practice Act, was held to answer in the Superior Court.

Dr. Charles R. Spencer was arraigned today in the court of Judge Edwin Hahn on the charge of performing an illegal operation on Eva McArthur, 24-year-old typist, last September. In the course of her testimony at the recent preliminary hearing of the case, the young woman . . . declared that effects of the alleged operation left her partially and probably permanently paralyzed (Los Angeles Herald, December 21, 1926). There is no record that Charles R. Spencer is licensed to practice in this state, and we understand he is the same individual as Culver R. Spencer, mentioned in "News Items" of June, 1926.

"E. O. Tilburne, 332 East Colorado Street, Pasadena, agent for Wilshire's I-on-a-co, a health device, was bound over to the Superior Court on a charge of treating the sick without a license. . . . Tilburne called himself Doctor Tilburne unlawfully. . . . An electric belt, pamphlets, and newspaper advertising in which 'Dr. E. O. Tilburne' was named, were exhibited by the prosecution."

**Pollen Toxemia in Children**—The symptoms of this condition, according to I. S. Kahn, San Antonio, Texas (*Journal A. M. A.*), are: Frequent almost non-intermittent so-called colds dating from early infancy, which actually represent the mild type of hay fever so frequently seen in asthmatic children. Typical severe seasonal hay fever is unusual. Frequent attacks of bronchitis antedate the initial asthmatic attack. Infantile eczema is a common story. The family history almost invariably shows hay fever or asthma. The noses of these children are frequently in a state of prolonged obstruction with almost constant mouth breathing, resembling extensive adenoid growth. Removal of adenoids and tonsils in all these cases had not given relief. Nose picking and rubbing is a common story. The physical examination of these children shows deficient growth and weight, and backward mentality. The complexion is sallow or of a saffron tinge: on the whole, the condition decidedly resembles hereditary syphilis or hookworm infection. The nasal mucosa is typical of vasomotor rhinitis. The chest is barrel shaped, with marked emphysema and heavy generalized rale formation. Cardiac enlargement and murmurs are absent. The abdominal examination is negative. Eosinophilia is uncertain, while a lymphocytic increase is not unusual. The most remarkable result of this toxemia is psychic in character. The mentality is deficient, the condition resembling that of morons or idiots in severe cases. Languidness and listlessness are the rule, alternating with spells of intense temper and fury. These children are almost invariably extremely cross and irritable, resisting all handling, and crying on the slightest provocation. The appetite is poor and capricious, and nocturnal neuresis is common. Within a few weeks, or at times even days, following the institution of proper measures to control the vasomotor rhinitis by desensitization or pollen precautions, the entire picture changes. With improvements, but long before complete elimination of the hay fever and asthma, the complexion clears, appetite returns, and the general physical condition rapidly approaches that of the normal child of that age.

## READERS' FORUM

The following letter from C. B. Pinkham, secretary Board of Medical Examiners, to the "Editor of The Stirring Rod" is self-explanatory and contains information of value to physicians:

San Francisco, California.

January 18, 1927.

Editor of The Stirring Rod,  
300 Broadway,  
San Francisco, California,

Attention  
Mr. Sidney J. Wolfe

Dear Sir: The January 1927 issue of The Stirring Rod, on page 10, printed an article by G. D. Johnson, a Stockton druggist, assailing the doctors of California and particularly the Medical Practice Act, basing his complaint on a statement that "about a year ago a pharmacist was arrested for practicing medicine without a license for selling over the counter a box of female pills advertised and sold throughout the United States. A jury acquitted him. . . ."

Knowing the news item to be a misstatement of fact and most unjust in its criticism of the doctors, as well as the law, we made a search for the motive that inspired its venom. The violator file of the Board of Medical Examiners disclosed the G. D. Johnson, alleged as connected with the Kin-Tai-Do Pharmacy, came to our attention in 1923 through a card reading "Dr. G. D. Johnson, 245 South Eldorado Street, Stockton." The records disclosed that there was no one by that name licensed in the state of California, and an investigation produced sufficient evidence to warrant filing a charge of violation of the Medical Practice Act. The records show G. D. Johnson pleaded guilty in the Superior Court, Stockton, California, of the offense charged and on December 3, 1923, was sentenced to pay a fine of \$150.

In March, 1924, complaint again came to us that G. D. Johnson was treating various patients, mostly women, giving hypodermics, etc., but nothing developed until 1925, when it was reported that Johnson was located at 320 East Lafayette Street.

A letter in our files dated Stockton, November 4, 1925, signed Hugo Hagenhofer, 715-F Church Street, Stockton, reads: "My daughter is in hospital here suffering from an infection caused by illegal operation which she accuses Dr. F. H. Johnson. . . . This man is at present employed at the Kin-Tai-Do Drug Store. . . ." Reports of our investigation department indicated that Mrs. S. called on G. D. Johnson at the above named drug store, that he took her to his residence and, according to her story, made a physical examination, told her she was pregnant and that he would relieve her for \$50, that Mrs. S. paid \$20, and it is alleged Mr. Johnson then performed some sort of an operation, which produced the desired result in four days.

A later report relates that on January 4, 1926, G. D. Johnson, on being questioned by District Attorney Dunne of Stockton and Special Agent Henderson of the Board of Medical Examiners, stated that he had sold the husband of Mrs. S. two boxes of pills at \$6 each to relieve her suspected pregnant condition, and that he made a general denial of the story regarding an operation. So much to explain the circumstances which presumably were the basis of his complaint that a pharmacist had been "arrested for practicing medicine without a license for selling over the counter a box of female pills. . . ."

On January 4, 1926, it is reported that a Stockton police officer, armed with a search warrant, took from G. D. Johnson's residence, 320 East Jefferson Street, Stockton, various instruments including a speculum, forceps, vaginal probes, stethoscope, about forty hypodermic needles, etc., and thereafter a charge of violation of Section 274 of the Penal Code, as well as a charge of violation of Section 17 of the Medical Practice Act, was filed.

On April 5, 1926, Mr. Johnson was acquitted on the Penal Code charge. However, on November 8, 1926, Mr.

Johnson was found guilty by a jury in the Superior Court at Stockton of a violation of the Medical Practice Act and thereafter sentenced to pay a fine of \$500 and serve five months in the San Joaquin County jail, a notice of appeal having been given when sentence was imposed.

Is it to be wondered that Mr. Johnson urges "something should be done to take away some of the powers of the State Board of Medical Examiners"? Does he make this appeal so he can use the various instruments, hypodermic needles, etc., seized in his home?

Our narrative discloses "the inspiration" that created Mr. Johnson's attack on the medical profession and the Medical Practice Act.

We leave it to your readers to decide whether the druggists of California cry for "protection" against "prosecutions for violation of the Medical Practice Law" in such an instance as has been related.

We know your sense of justice will lead you to give this statement the same publicity as was given the article by Mr. Johnson printed under the headline "Medical Practice Act Wrong."

Very truly yours,

BOARD OF MEDICAL EXAMINERS.

C. B. PINKHAM, *Secretary-Treasurer.*

#### THE NEW YORK MEDICAL WEEK

The Official Organ of the Medical Society of the County of New York

Representing the Activities of the Medical Organizations of Greater New York

New York, December 22, 1926.

*Dear Editor:* The enclosed article or letter was written in an effort to awaken the profession to know the real men who bore the brunt of the struggle to give physiotherapy to us. There is altogether too much tendency just now to keep physicians in the dark about who these pioneers really were, and for this fault the electrical instrument makers and their put out "literature" is to blame.

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#### WHO GAVE US PHYSIOTHERAPY?

Last September's issue of CALIFORNIA AND WESTERN MEDICINE had a timely editorial on "This Physical Therapy Stuff" that should encourage more general resort to physiotherapy by the profession everywhere. Physiotherapy, by the way, is older, more euphonious and universal than the recently coined cumbersome term, physical therapy. It was gratifying to those active for years in this field to see our leading organ on the Coast give credit in this movement to such pioneers as Massey, Pope and Morse, all honor to each of them. But why overlook that outstanding figure who has borne the brunt of thirty-odd years' valiant struggle for its recognition, Dr. William Benham Snow of New York, whose quarter century editorship of *Physical Therapeutics* was lately celebrated by a largely attended testimonial banquet at Atlantic City, tendered him by his many friends in the profession? Successful practitioner, author, teacher and editor, possibly no man in any country has thoroughly instructed so many physiotherapists or has done more to further the use of physical treatment agents than this energetic veteran in our ranks. His laboratory continues to be a center for physicians from all states and countries when passing through the metropolis, the same smile and hearty handshake as of yore greeting the newcomer.

Why physiotherapy? The huge physiotherapy clinics of our recent war hospitals were, of course, a large factor in the favor with which the American profession now receives it. The hundreds of doctors in these hospitals, then army officers, on returning to civilian practice carried home many of the new methods learned in these clinics, especially when the latter were in charge of men thoroughly trained in this field.

Years before the World War, though, a devoted group of progressives among us, dissatisfied with the meager results of prevailing therapeutics, had been seeking the

aid of various physical forces for relief of the sick and injured. Massage, hydrotherapy, remedial exercise, these had found favor with the fortunate few who had studied under their advocates abroad. Some of the additional physical methods now in use, electrical agents, are American in origin and have supplanted much of the first named on this side of the Atlantic. The work of Massey, Rockwell, Herdaman and others in continuous current (galvanic) methods is now established history.

After Dr. William J. Morton's return from Charcot's clinic in Paris in 1881, his discoveries of the static induced and static wave currents are believed to have given the incentive to d'Arsonval, Oudin, Tesla, Strong, and a few others to develop the now much emphasized high frequency currents and apparatus. Snow was another leader in broadening static modalities. The original suggestions of Leduc and Lewis Jones in ionic electricity, of Mary A. Cleaves and W. B. Snow in radiant light and heat, in the late nineties and after, also became permanent additions to our therapy. Roentgenotherapy, growing at that time, need only be touched upon here. Use of ultra-violet and other spectral rays did not come into vogue until fully a decade later.

One must not overlook probably the most valuable agency for furthering research in this field from its outset, the American Electrotherapeutic Association, more vigorous now than ever, in its thirty-sixth year, with membership in most of our states and in other countries. At its meetings were announced many of the new discoveries and, in checking up their values, there were given the expert opinions of such electrical engineers of international repute as Elihu A. Thomson, Samuel Sheldon, William A. Jenks, Charles L. Clark, and their compeers. These were the authorities who also passed on now established definitions of currents, their nomenclature and terminology.

One must not omit from this roll of honor another still among us, Dr. Frederick F. Strong, long a Bostonian, but in late years enjoying the climatic and other delights of southern California. Fully a quarter century ago this busy practitioner found time to invent probably the earliest workable high frequency apparatus, to publish a textbook on the subject and, by his decided originality and energy, to give this specialty much of its early credit and impetus.

There can be no question but that, with the rapidly growing absorption by the profession of these proved physical methods, the present blatant treatment cults will find their occupation gone and the public's demand for such physical measures supplied by the former. Then the scientific physician will have restored his rightful earning capacity.

This restoration, however, implies ample opportunity to obtain real postgraduate training in these methods. It should prove welcome news, therefore, that the several national physiotherapy societies of physicians are together planning (1) a common curriculum for medical graduates wishing to learn the subject and (2) a training course in hospitals for nonmedical technicians; these are then to be submitted, as suggestive, to the Council on Physical Therapy of the American Medical Association. This has not come any too soon, as it is full time that the present one-week stands of peripatetic lectures on the subject, usually under covert control of apparatus makers, should be replaced by just as thorough-going instruction as in each other limited field of practice.

A. B. H.

**Hypophysectomy and Replacement Therapy**—The basal metabolism of totally hypophysectomized rats was found by G. L. Foster, Berkeley, California, and P. E. Smith, Palo Alto, California (*Journal A. M. A.*), to be about 35 per cent below the average of their series of normal animals. The metabolic rate of these animals may be restored to normal by daily anterior pituitary homotransplants or by daily injections of thyroid extract, but not by daily injections of posterior lobe extract. The specific dynamic action of glycocholic acid is absent in hypophysectomized animals and apparently can be restored only by replacement of both anterior and posterior lobe, but not by either one alone.